Guide

to

The Foundation Desk

AN INSPIRATIONAL DEVICE
FOR CHILDREN

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Preface

FOR PARENTS

THE FOUNDATION DESK, its accompanying GUIDE and the WORK AND PLAY BOOK are presented as a very important home device to add new meaning to the education of children, to bring out those qualities of mind which may indicate the direction of special talent, and to afford entertainment of unquestioned character.

It is an educational maxim that we learn to do by doing. The FOUNDATION DESK sets children to work at delightful tasks and directs them so tactfully that what might otherwise be considered as work becomes in a large sense play. The exercises have been selected with great care; our aim has been to get an instant response from the child heart and mind to those things which help to mold character, promote health, broaden perceptions and inculcate thrift.

Besides all this, the FOUNDATION DESK will prove a boon to parents who are often unable to find the right material to interest children and keep them busy and contented in the hours when school and study tasks are over. At such times natural inclinations of childhood frequently lead in directions which gravely concern parents; this DESK and its equipment we believe will to a great degree solve the problem of idle hours.

The order of presentation of articles in the GUIDE follows almost exactly the order in which corresponding titles appear upon the large chart panels. The GUIDE is to be used in connection with those panels, for in this book the panel suggestions are the basis of all the descriptive material.

THE WORK AND PLAY BOOK is aptly described in its name. In it is the concrete application of the idea that play may be directed into profitable channels and that children will respond with enthusiasm to the idea of awards for tasks well performed.

That the FOUNDATION DESK shall be the "office" of the child, his workshop, the connecting link between home and his school, is the hope of

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Drawing

Almost anyone who can learn to write can learn to draw. If we understand something about how pictures are made, they mean more to us. The form, size, position, detail, grace and strength all talk to us. When we learn to pick out the artist's method of bringing out points, we feel acquainted.

TOOLS. *Paper.* A grained or rough-finished paper such as manila is best for pencil work; smooth, fairly hard paper is required for ink.

Pencils. Use a soft pencil. The point should be long, but chisel-shaped rather than pointed. The chisel-point can be turned to make either a sharp or a broad line.

Eraser. A soft rubber eraser, art gum and dry bread crumbs are all good. To erase, rub lightly downward. Never rub back and forth across the paper.

Drawing Board. A surface that stands at a slight angle is better than either a vertical or horizontal one.

Scrap Book. When you see a good illustration, clip it and put it away for future use. For this purpose, loose leaves which can be tied together are better than a bound book.

Drawing Book. Samples of your work can be bound together in the same way as the scrap book. Design a cover for each book.

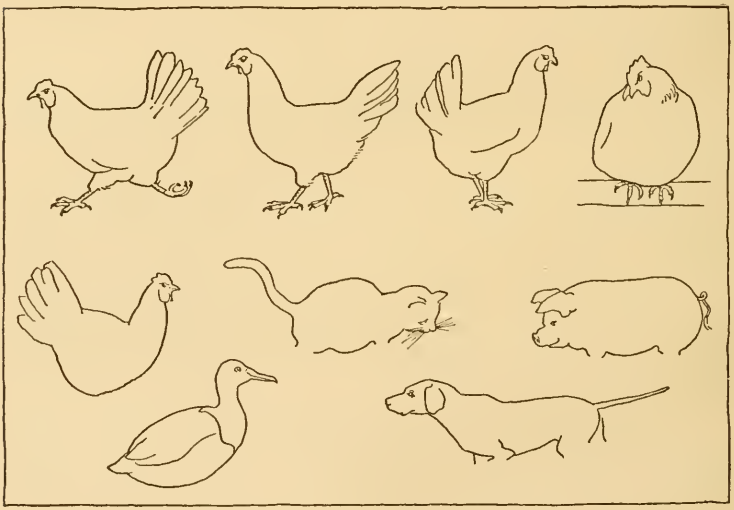
LINES MAY SHOW STILLNESS, OR REST, OR ACTION. In the center of the panel on the first drawing chart are ovals and straight lines put together to look like men. How are the joints represented? Spaces may mean as much as lines. Are all the lines straight? Do they all run in the same direction?

A *vertical* line is one which is parallel to the side of the page. A *horizontal* line is parallel to the top and bottom of the page. An *oblique* line is a slanting line.

Find all the vertical lines in the pictures of the men. Find all the oblique lines. How many horizontal lines are there?

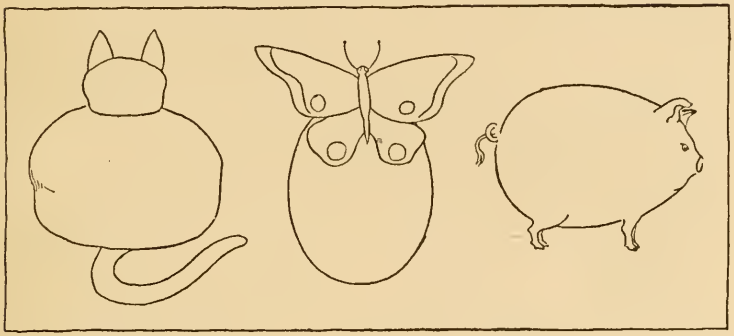
What is the first man doing? What is the second man doing? Which direction are the lines which show that he is moving his leg and arms?

In these drawings vertical lines show something not moving; horizontal lines show sleep or quietness; oblique indicate movement. What tells you that the the second man in the lower row is running, not walking?



Exercises. Draw a chicken, a duck, a cat, a dog, and a pig without any legs. Put legs on them to make them run, walk, stand still, sleep. Shall you want to change the heads, tails, ears, and wings, to show any of these actions?

Draw a round loaf of bread. Put a small loaf of bread on top of it. Add ears and a long tail.



Draw an egg, small end up. A butterfly with long wings lighted on it. Add a short tail.

Draw an ellipse. Make it into a pig.

OBJECTS MADE FROM SPHERES AND CYLINDERS

The curved lines on the object in the upper left-hand corner of the panel tell us that it is a sphere and not a circle.

Make the sphere into a pumpkin. What lines does the artist use to show the dent at the stem end? Can you copy those lines so that they say the same thing in your drawing? Which of the two pumpkins is the farther away?

Make the sphere into a teapot. What do the shaded lines at the left of the lower part of the teapot show? And the shaded curved lines on the side?

Is it easier to draw the teapot and the pumpkin when you know what each line is for, and what kind of lines are used to get certain effects?

Draw circles and make them into faces. Make some of the faces longer than they are wide. Egg-

shaped drawings are called ovals. Make some of them wider than they are long. You remember that is the shape of the earth's orbit—an ellipse.

Draw spheres and make them into apples; into vases; into pitchers.

The next form is a cylinder. The pail, drum and tower are all made from this form. Name all the things you think of which are cylindrical in shape.

What shows that the surface of the cylinder is curved? Is the top of the cylinder a circle? Is it an ellipse? Is the line at the bottom of the cylinder exactly the same curve as the one at the top? Can you make yours exactly alike?

What direction of line is used to make the head of the drum look flat?

LINES SHOW DIRECTION OF SURFACE. Horizontal lines indicate horizontal surfaces. Vertical lines show vertical surfaces. Curved lines, like those on the teapot, show curved surfaces. Oblique lines show slanting surfaces.

Horizontal lines are also used to show horizontal

motion, as of waves in water. Vertical lines may show falling water. Curved lines give an effect of grace.

Notice that you can see the top of the drum and pail; in the picture of the tower we are looking from below up toward the top, so that we can see only the front curve. Because we are looking from below instead of from above, the line curves up, not down, as do the front edge of the cylinder, drum and pail.

What else is shown besides the tower? Irregular, vertical lines are used to represent the grass. Is the hill close, or far away? What did the artist do to make it look far away?

Draw cylinders and make them into plain and fluted pillars. Make cylindrical pitchers, vases and baskets.

SQUARES, CUBES, RECTANGLES AND TRIANGLES

At the right of the panel is a cube. How many sides of the cube can you see? How many sides has a cube?

Draw a square. Can you see the edge of the top and right side of another square back of the front face of the cube? Draw these lines. With dotted lines fill out the squares which represent the sides of the cube which you cannot see.

What direction lines connect the corners of the front square to those of the back square? Are these connecting lines as far apart at the back as they are at the front?

Oblique lines which are closer together at the back than they are at the front show distance. Lines which seem to lead away from us are called *receding lines.* Lay a long pencil along each of the two receding lines, and notice that the pencils will come together.

Draw the rectangle for the front of the basket. Draw in the lines to complete the picture. Lay your pencil along the lines in order to see just what direction they take. Add horizontal lines to indicate the surface on which the basket rests.

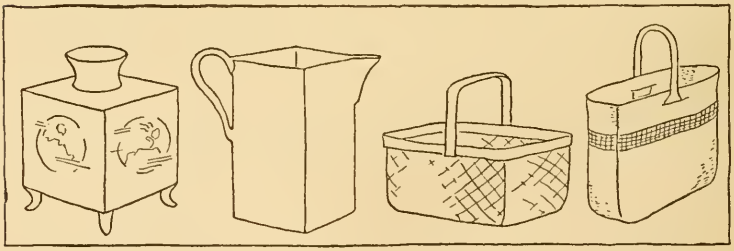
Is the side of the cabin a square or a rectangle? A rectangle with a triangle added? Can you learn the name for a figure of that shape? Notice that you cannot see the top of the roof, but can see the under side of it, where it projects over the front of the cabin. Are you looking at it from above or from below? Study the drawing; sketch it in lightly. When you have it correct, put the lines in with heavier strokes. Are there curtains?

Exercise. Use the square and rectangle as bases for vases, pitchers, baskets.

CONES AND PYRAMIDS

What direction do the lines take which make the base of the pyramid? Draw the pyramid with one side directly facing you.

What kind of line forms the base of the cone?



The cone lying on its side makes the basis for the trumpet. Are some of the lines in the hat heavier than others? Do they emphasize anything?

Study the picture of the tent, then copy and tell

a story about it. Is it an Indian wigwam? Do white men make such tents?

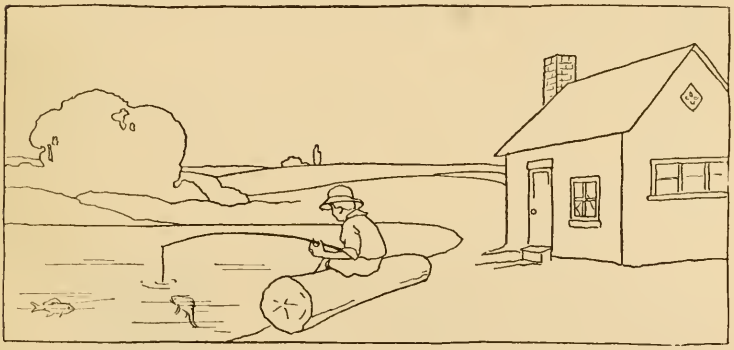
Make all your drawings large.

Exercise. Make pitchers, vases and baskets, using the pyramid for the idea of form.

STUDIES TO COPY

Draw the front of a box. Put wheels and a handle to it, making it into a wagon. Put two pumpkins in the wagon, showing only the tops of them. Do you think there are more pumpkins inside the wagon? Tell a story about going to the field to get the pumpkins.

Draw a cabin on the edge of a pond. Show a log on the bank of the pond. Draw a boy sitting on the



log fishing. Draw a horizontal line to represent the surface of the water. Draw some fish under the surface of the water coming to get the bait. Put a title under the picture.

Draw the side of a box. In it draw some short oblique lines. Draw a duck in the frame. What do the oblique lines represent?

MORE LINES. Lines may mean many things.

Sometimes they show trees in the distance, sometimes clouds, rocks, sides of buildings, etc.

Because lines are used for so many things, we want to be able to make them skillfully.

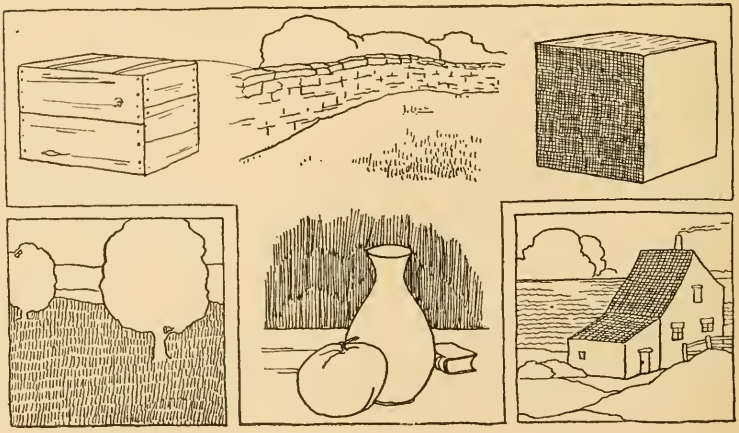
Draw these studies from the first large panel on Drawing over and over until you can make them readily. Let the pencil bear evenly on the paper the entire length of the line—not heavy in the beginning and light at the end.

Learn also to make graded lines, heavy at the beginning and lighter at the close; and lines which begin light and grow heavier. These are called *graduated* lines. Objects in the foreground are drawn with heavier lines than those which are in the distance.

Sometimes instead of making a heavy line we emphasize a line by drawing one or more parallel lines close to it. Emphasized lines also indicate surfaces.

Broken lines indicate broken surfaces, ploughed ground, tree trunks, rough wall, wicker work, etc.

Both broken and emphasized lines may be graded.



SKETCHES TO COPY. Practice exercises on all kinds of lines—parallel, graduated, back and forth (cross-hatching), broken, to give effect of solid background, wave lines. The artist has here suggested simple figures which use each of these lines.

PLACING OBJECTS

Horizon Line—Center of Vision

Draw a horizontal line. Near the middle of the line, draw a ball resting on the line. Make this ball into an apple. Draw two balls to the left of the apple and on the same line. Draw one ball to the left and farther away than the apple. Draw a ball to the right and nearer to us. Should all of these objects be made the same size?

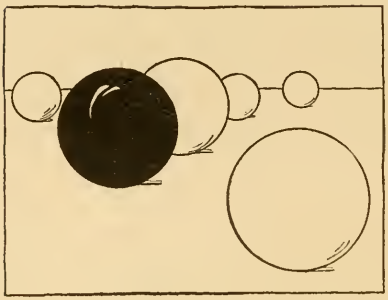
Make all the balls which are on the same line into apples. Write a description of the picture, telling where each ball and apple is in relation to the center apple.

When we are on a large body of water or on level ground with no trees or buildings or trees to interfere, we can look away off to where the sky and earth seem to meet. The line where they seem to meet is called the *horizon* line. In a drawing, objects which rest on the horizon line are the same distance away.

Objects the tops of which touch the horizon line are the same size. It makes no difference how large or how small we draw them. The lower edge will indicate whether they are near or far away. The closer they are the lower down they will be in the picture, and the larger they will look.

The point on the horizon which is indirectly in front of the eye is called the *center of vision.* We see the left side of objects at the right of the center of vision, and the right side of objects to the left of the center of vision. We see the lower side of objects

above the horizon, and the upper side of objects below it.



Exercises. Draw one black marble and five white ones and tell the position of each one. Copy drawings of landscape with trees, and farmyard with house, barn, poultry house, three trees.

FRUITS AND FLOWERS—SIMPLE SCENES

Placing and Surfaces

In the picture at the lower center of the second panel, which is nearer to us, the house or the trees? How do you know this? Describe the picture as to the location of each object—nearer to or farther away to the right or left of the house. Placing objects to make a pleasing arrangement is important.

With lightly-drawn lines connect each of the two trees with the moon in the upper picture. What form have you? What shape is the moon? The treetops?

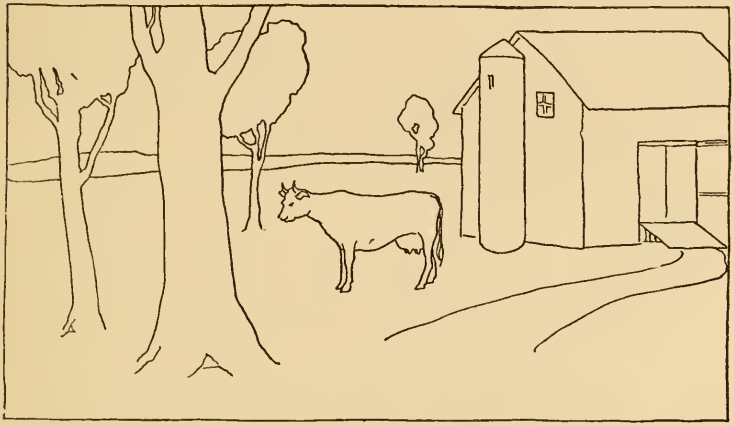
Are the two potatoes the same size?

In drawing the narcissus, be careful that the markings on the petals indicate the way the petals curve. Which flowers are farthest away?

What form is the morning-glory? Of what use are the lines on the neck and mouth of the blossom?

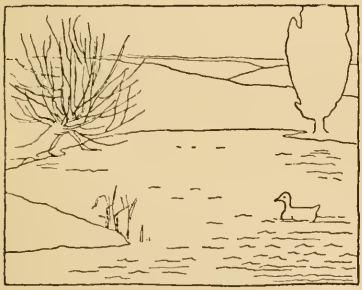
Notice the oblique lines on the sails of the boat, the vertical lines on the stump and on the leaves of the narcissus, and the curved lines on the bough that holds the pear. Pick out the lines on the peach, its branches and leaves, and on the cherry.

Exercises. Draw a picture showing a cow facing to the left. There is a barn at the right of the cow, a tree trunk at the left. The top of the tree does not



show. One tree nearer to us than is the cow, two trees farther away, a path leading to the barn. No detail, just effect.

In one picture draw the surface of a pond with a duck on it. Show the ripples.



Draw the side of a wall with a dipper hanging against it.

In the picture at the right of the third panel, what lines give the effect of quiet? How is the water

indicated? Do the cow's eyes have a sleepy look?

In the center picture, which objects show action? Draw this picture, and put in strokes to indicate ground around the boy and the geese. Show grass at the left front.

The Farm Scene. What is the hen eating? Draw the picture, and show kernels of corn. The little chicken is running for a bug. Is it in the air or on the ground? Show the bug.

Why is the rooster shown so much larger than the house?

Exercise. Write a story about each of the pictures on the chart.

"I think when little chicken drinks
It takes the water in its bill,
Then holds its head away back so,
And lets the water run down hill."

Show a chicken taking the water in its bill, and another holding its head high.

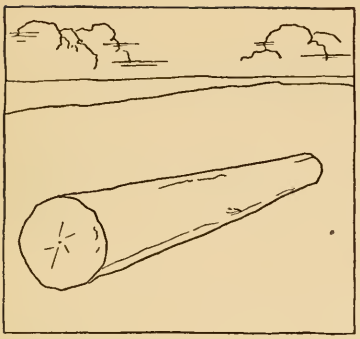
PERSPECTIVE (FOURTH PANEL)

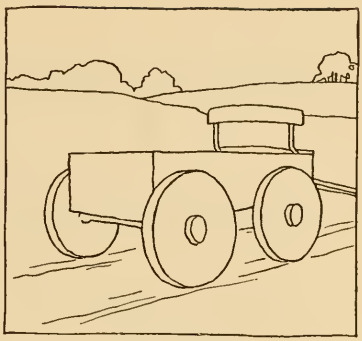
Study of a Box. A shoe-box will serve as a model. Set the box in front of you and study it from the standpoint of putting what you see on paper.

How many sides has it? In drawing, sides are called *faces.* How many vertical edges? How many horizontal edges? How many receding edges? How many edges in all?

Draw the box as you see it, directly in front of you and on a level with the eye. Draw it below the eye; above; to the right; to the left; to the left and above; to the left below, and so on, until you have drawn all of the nine views.

Receding Cylinder. Notice how the receding lines of the cylindrical log seem to draw nearer together as they approach the horizon. In drawing a

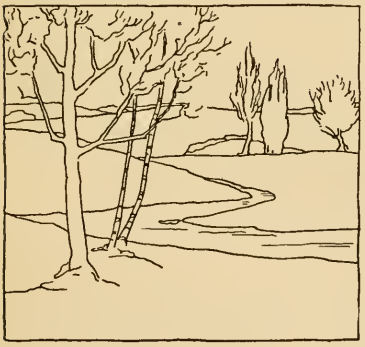


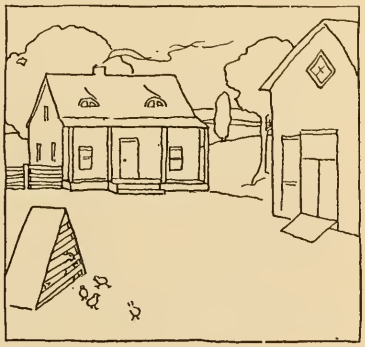


side-back view of a wagon, the receding lines from the wheels on the side toward you show just how large the wheels on the opposite side should be, at any point they may be placed.

Exercises. Draw three boxes on a line below the horizon, with one box on top of the left one. Draw a bird on the upper left box, and an apple on the right box.

Draw a simple design for a calendar page for each month in the year. Example: January—New Year, Eskimos, skating scene or snow scene.





Draw the front of the house you live in.

Draw baskets, lunch boxes, bird houses, trunks, wagons, and other articles in each of the nine positions.

Picture-Making With Scissors

SUGGESTION TO PARENTS. Blunt-pointed scissors, waste paper, and permission to cut will keep children quiet, out of mischief and contented for long periods of time.

The first thought of the busy mother is the necessarily disordered and littered room. Generally, clearing away the litter is much less trouble than settling the disputes and repairing the accidents which are sure to result from irritation, restlessness and downright mischievousness which arise from having nothing to do. The children should be taught while engaged in paper cutting not to scatter paper scraps all over the floor and to put things in order when they are through. Paper-cutting with a purpose is educational as well as amusing. Free-hand cutting gives dexterity to the hands; study of the object or picture pattern trains in observation, sense of proportion and outline. Initiative, inventive faculty and imagination are developed in planning new pictures to cut and in building stories around the characters and scenes. The pictures suggest dressing-up frolics, another amusement which will keep the children occupied indefinitely. Play-acting develops the imitative faculty, memory, ease and self-control, and provides amusement for the players and an audience.

If the home does not provide a sufficient number of pairs of scissors they can be purchased at the hardware or variety store for a very nominal sum. There should be a pair for each child.

Any paper will do in the early stages of the work. Part of the sport consists in watching the paper which is brought into the house day by day and in salvaging

that which can be used. Later, if desired, special papers may be purchased from kindergarten supply houses, the paper stores or the fancy goods counters. Art papers, rough or glazed, in plain colors, checked like gingham, figured like calico or lawn, heavy or light, thick or thin, smooth or rough, gold or silver, crêpey or lacey or brocaded, like a grandmother's dress—all kinds may be bought.

Teach the children to spread newspapers to catch the clippings, and let them cut.

THE CUT-OUTS

Now for the cut-outs! First, we need blunt-pointed scissors and paper or pasteboard to cut. Later on we may use our crayon, paints, ruler and paste.

We will spread newspapers to catch the clippings. Be careful to see that the edges are well overlapped, for paper sticks to the rugs or carpets and is hard to gather up. By using newspapers, when we are through we can take hold of one side of the paper mat, roll it very carefully and turn in the ends so no pieces can fall out, and burn the litter.

What kinds of paper can we find that we can use? There are the heavy papers from the butcher shop, grocery and hardware store, light wrapping-paper from the stationery and dress-goods stores, plain-colored, striped, and checked papers which we sometimes get at the drug stores, odds and ends of wall-paper, the backs of old envelopes, lace or satin papers from candy-boxes, gold and silver papers—it seems as though there is no end to the good paper we can have for the finding.

Let's pretend we are prospectors looking for gold; or Indians gathering birch-bark to use in sign-writing. Who will find the first good piece? Who will find the best and prettiest? If we do not have just

the color we want, we can color it with our paints or crayon.

We will practice with a piece of wrapping paper. If it is very wrinkled, we shall need to press it smooth with a warm iron. Be careful not to have the iron hot, as paper scorches easily.

PASTING THE CUT-OUTS. Our cut-outs might

CINDERELLA BY THE FIRE

get torn, if we do not handle them carefully. We could paste them on a piece of paper and make a real picture. What color shall we use—white or the dark-brown wrapping paper? We shall need a rule to mark off true straight lines to make a perfect square or oblong. How is a square different from an oblong?

When we paste we must be very careful not to

soil the paper and to lay every part of the cut-out just where it should be. Wet paper stretches and loses its shape and tears very easily, so we must handle it as little as possible.

Do not put the paste all over the cut-out. Put

CINDERELLA AND THE PRINCE

just a tiny bit at the upper and lower edges and a few spots along the sides, then put some on each little point which sticks out, so it will lie smoothly in place. Do not put any over the middle of the cut-out. Lay the cut-out on the paper mat, spread a clean piece of old cloth over it, and smooth out from the center toward the edges.

Do you know how to make paste with flour and

water? Mother will show you. Three drops of clove-oil dropped into the paste when it is done will keep it from souring.

THE CARROT. Shall we start with the carrot? The jagged part at the top is where the leaf stems were cut off. The wavy-looking sides are caused by the little creases we often find in a carrot. What color paper would look most like a carrot? Could we cut the stems of green paper and paste them on?

BUNCH OF CHERRIES. It isn't easy to get the circles exactly round, and we must be careful not to snip off the stems. Shall we make the cherries red and the stems green? Then it will look like a real bunch of cherries. Is all the stem green? Did you ever notice the dark-brown collar around the top of the stem? That is the cover that kept the little bud from getting frozen last winter.

THE ELEPHANT. It isn't so hard to cut vegetables and fruits, but do you suppose the elephant will stand still long enough to have his picture cut?

Let us look him over before we begin. Have you ever seen an elephant? Most important, of course, is his long trunk. In the picture it is curved a bit. The lower lip of his wide mouth shows behind the trunk at the top. I think the little bulge at the neck is the point of an ear. The top of the head is rounded, the line hollows down for the neck, then up for the back, then slopes away down to the tail. There are four legs, with big flat feet. Is the lower end of the trunk straight across in the picture? Can you see the tusks? Where are they? Can you find the place where the eye belongs?

Let us see about how high and how long to make him. We can make some big mamma and papa elephants and some little baby calf elephants. Elephants live in herds—the mammas and the babies and the big boss elephant who leads them and tells them when to look out for danger.

When you have finished cutting, notice whether you have his front legs too close to the trunk. Does he slope down enough toward the tail? Can you trim up the corners and make him look better? What color of paper would make him look like a real elephant?

Paste him very carefully on the background paper. He should be in the middle from side to side, but we may place him nearer the lower edge than he is to the upper edge. Be sure that his legs and his tail and his trunk paste down smooth and straight.

Or, we might paste him to one side of the picture and cut a palm tree to put at the other side. Or, we could paste a group of elephants all in one picture. Then we could make some grass for them to stand on.

Elephants are so big that they appear slow and clumsy. Sometimes they stand in one place a long time, blinking their eyes and swinging their tails from side to side. It really wasn't so hard to make this one's picture, was it?

THE BALL PLAYER. Notice his loose, baggy clothes and flat-soled shoes. He is wearing a small, round hat. We can make nine ballplayers all with suits the same color, and then we shall have the home club. Then we could make some with suits of another color; they would be the visiting club come to play our team.

SPIRIT OF '76. Did you ever see a large picture of this group of three people, shown in the center of the large panel? What is it called? What does it mean? It represents a boy, his father, and his grandfather, more than a hundred years ago, in the war that made our country free. Which is the father? Can you see the pocket-flaps to his coat? And the ruffles on his shirt? What is he doing? What is the boy doing? Do you know which is the grandfather? Why can't we see the noses? Do you think

they are walking fast? How can you tell? What kind of trousers are they wearing? Notice that the back foot of the boy is so close beside the front foot of his grandfather that we cannot cut between them. Is it farther from side to side of the picture, than it is from the soles of their feet to the top of the tallest soldier's head? Measure and be sure.

Be careful in cutting the drumstick and the flute and the fingers. When you have finished cutting the outline, then cut out the open spaces between the figures. Work very carefully.

We could color their suits to look like the uniforms the soldiers of '76 wore. What color would that be? Did the colonist soldiers always have nice new uniforms?

THE CHRISTMAS TREE. What could we do with Christmas trees? Could we not use them on the cover of a book of Christmas songs and stories? How many candles can you count on this tree? Might there be others you cannot see? What are the round white spots? Why do not the flames of the other candles show? Can you cut very carefully so as to leave the little pine needles showing? Can't you imagine that you can hear the sleighbells? And the reindeer?

GIRL WITH MUFF. What do you think the little girl's name is? Where is she going? What time of year is it? How can you tell? Can you see any of her dress? Perhaps she got that muff on the Christmas tree. Is she walking fast or slow? How can you tell? Is she looking up, or down, or straight ahead? Don't cut off her nose.

OAK LEAF. What time of year would we find the oak leaf? When it is on the tree does it look as stiff and straight as it is here? Can you tell the different kinds of oak trees when you see them? Your father will tell you this is a burr oak leaf.

THE IRIS. The iris is a very pretty flower, and

would make a pretty cut-out to paste on a birthday card or a book-mark. We shall need to be very careful in cutting out the spaces in between the leaves and flower. Would you like to cut this from white paper and color it? What color should the leaves be? The flower? Mother can tell you.

THE ROOSTER. Do you think this is a Leghorn or a Rhode Island Red? Or what breed is he? Be very careful not to spoil any of those beautiful tail feathers nor a single lobe of his proud comb. What color do you prefer to paint him?

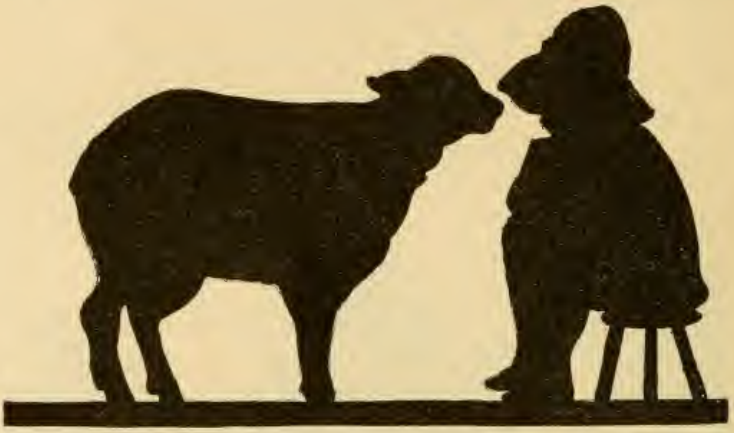
MOTHER GOOSE CUT-OUTS

A BOOK FOR OUR CUT-OUTS. We shall have ever so many stories. If we put them all together,

MOTHER GOOSE

they will make a book—a Mother Goose Nursery book for Baby Brother. Would you like to make baby a book? We could mount (that means paste carefully) the pictures on heavy paper and bind the edges so that they will not tear easily. Then we would need a cover.

MOTHER GOOSE COVER. The artist has one all ready for us to make with cut-outs. Here are the old lady who tells the stories, her goose, which is always with her, and a little girl to listen.



BAA, BAA, BLACK SHEEP

We shall need three kinds of paper to make this one. Black is needed for Mother Goose, white for the goose and the little girl, and some color between black and white for the background. The picture shows a background of what is called "cross-hatching." From a distance it gives a gray effect. We may use plain gray paper, or we may make the upper part blue, for the sky, and the lower part green, for grass. You might try using just a small bit of sky and more grass, or using a great deal of sky and only a little grass. Which way makes it look as though you could see a long distance? What do we call the line where the sky and earth seem to meet?

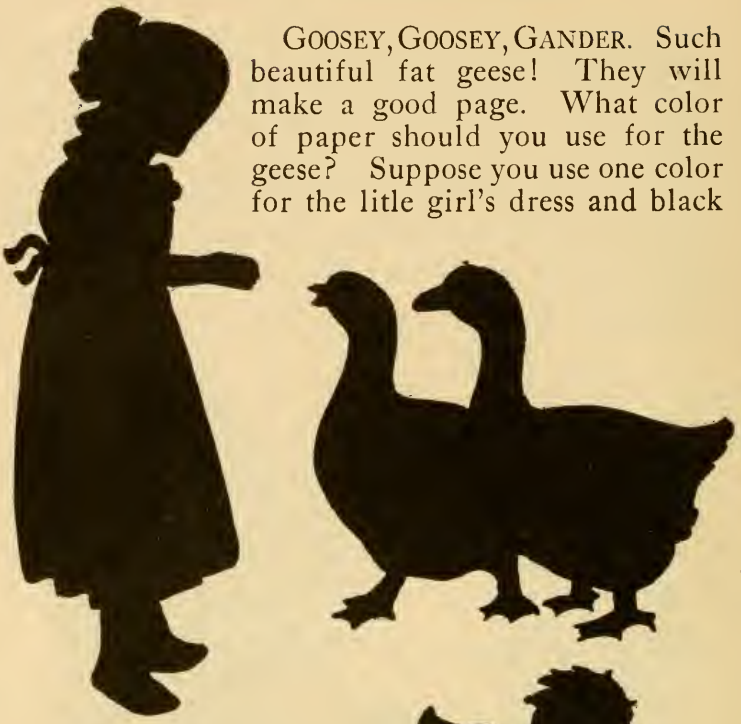
BAA, BAA, BLACK SHEEP. Do you know a story about a boy and a black sheep? Can you tell it? The sheep has come close to hear what "master" is saying.

Would you like to cut out the sheep and the boy and paste them? What is the line at the bottom for? Which part do you need to be most careful about? Can you write the verse very nicely to put on the page with the picture?

MARY HAD A LITTLE LAMB. Who are these two? Where are they going? What is Mary carrying? See her sash bow. Is the lamb holding back as though it knew it ought not to go to school? How do we make it look that way?

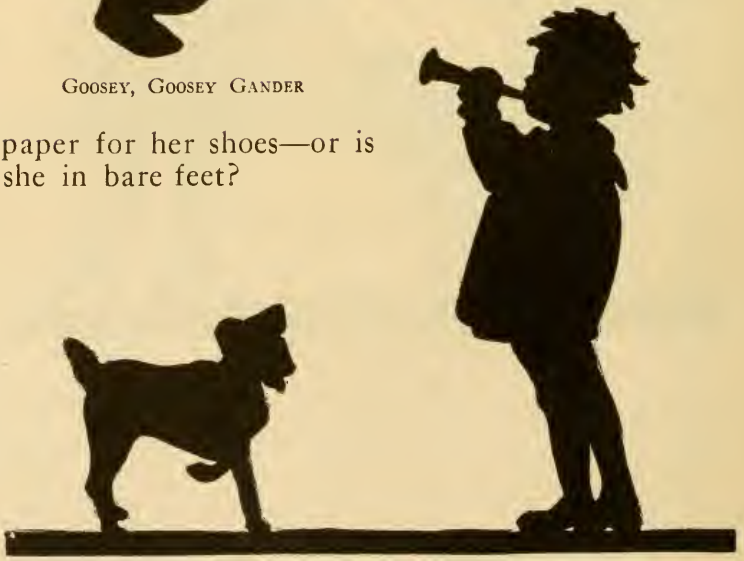
MARY HAD A LITTLE LAMB

Do you think Mary knows the lamb is just behind her? If you know the whole Mother Goose story of Mary and her lamb you will surely enjoy cutting them out in paper. If you use paper of two colors, what color would you make the lamb? What color of dress would you like to see on Mary?



GOOSEY, GOOSEY GANDER

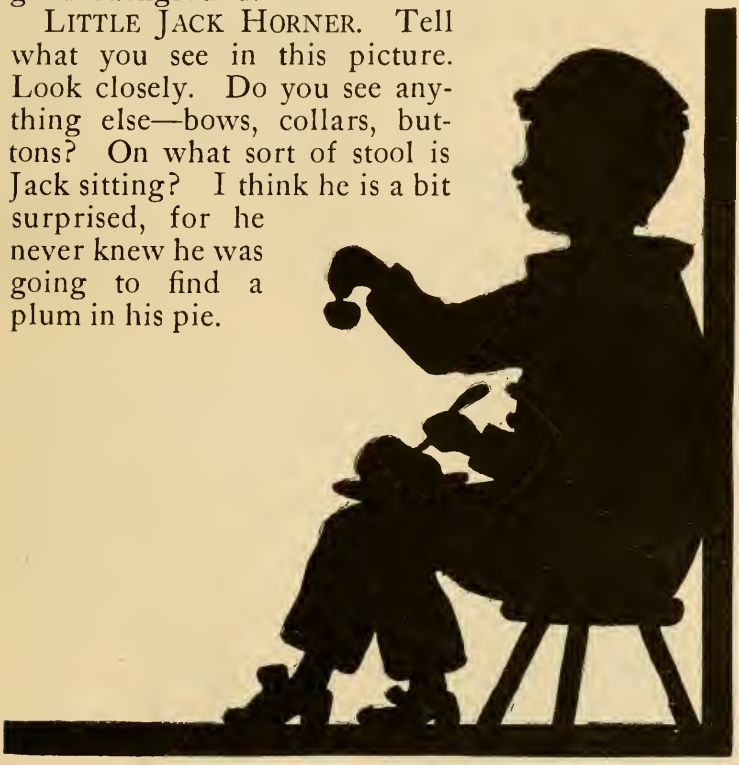
GOOSEY, GOOSEY, GANDER. Such beautiful fat geese! They will make a good page. What color of paper should you use for the geese? Suppose you use one color for the litle girl's dress and black paper for her shoes—or is she in bare feet?



LITTLE BOY BLUE

LITTLE BOY BLUE. Isn't this a cute Little Boy Blue with his hair all rumpled after his nap? Can you recite the poem about him blowing his horn. Suppose you use black or brown paper for the dog, green for the ground and some other nice color you like for the boy's suit. Then paste the picture on a good background.

LITTLE JACK HORNER. Tell what you see in this picture. Look closely. Do you see anything else—bows, collars, buttons? On what sort of stool is Jack sitting? I think he is a bit surprised, for he never knew he was going to find a plum in his pie.



LITTLE JACK HORNER

OLD MOTHER HUBBARD. You know the story of this picture. What kind of hat is Mother Hubbard wearing? What kind of shoes? Is she fat or slim? What kind of dog has she? Does he look as though he were waiting for something? Can you make your cut-out dog look like the one in the pic-

ture? Can you spell cupboard? How is the cupboard held in place on the wall? After cutting the picture, paste it on a sheet of paper. Write the verse on the page, just below your cut-out.

OLD MOTHER HUBBARD

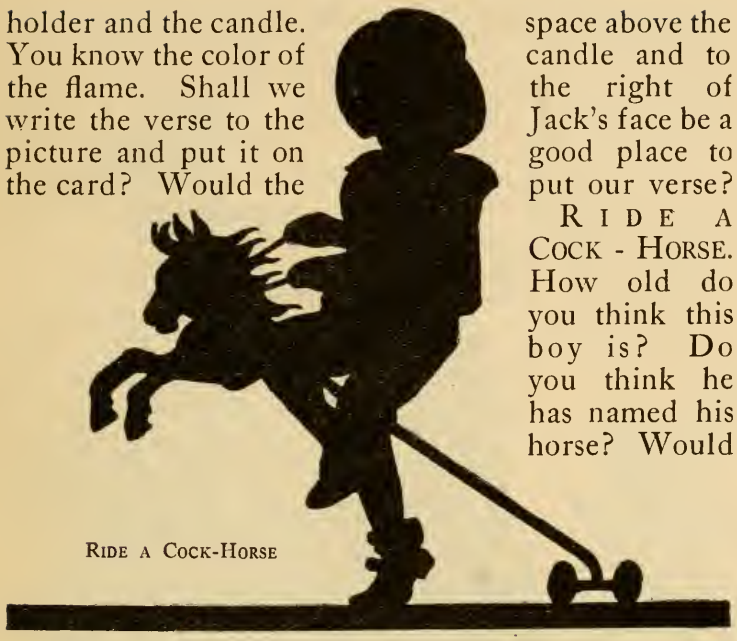
JACK BE NIMBLE.

Did you ever see a candleholder like this one? It is the kind great-grandfather and grandmother used to use. Mother can probably tell you about it, and the color to make the candle-

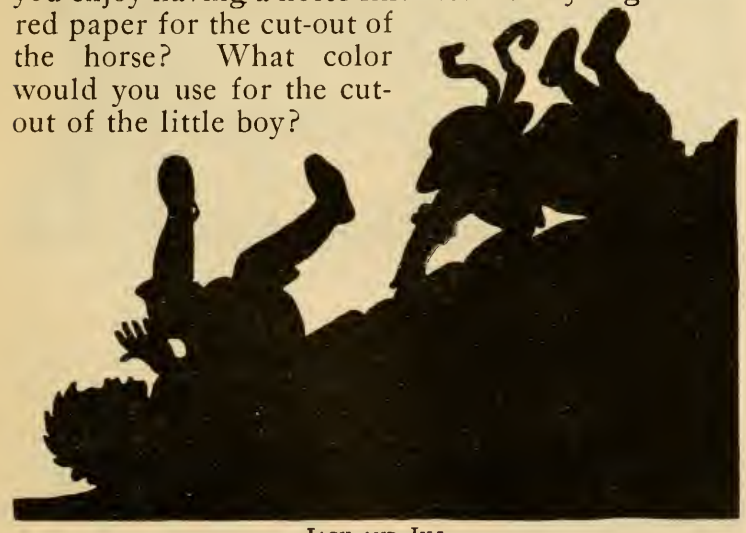
JACK BE NIMBLE

holder and the candle. You know the color of the flame. Shall we write the verse to the picture and put it on the card? Would the space above the candle and to the right of Jack's face be a good place to put our verse?

RIDE A COCK-HORSE. How old do you think this boy is? Do you think he has named his horse? Would you enjoy having a horse like his? Can you get some red paper for the cut-out of the horse? What color would you use for the cut-out of the little boy?



RIDE A COCK-HORSE



JACK AND JILL

JACK AND JILL. Look at everything in the picture before you begin work. Which parts do you need to be careful about, and what colors are you going to use? Write the verse about Jack and Jill.

LITTLE BO-PEEP. Does the little girl look worried because she has lost her sheep? Do you know about the shepherd's crook? What is the crook for? Do you see where the bars are down? There is a story about Little Bo-peep. In England, they do not have large farms such as we have here. The sheep pasture along the road or in a field with other people's sheep, so they have to be watched closely. Shall we believe Little Bo-peep to be an English girl, and that she is looking anxiously up and down the road to find some trace of her sheep? Cut out the girl first, in dark paper, then the gate in paper of another color, and paste them together.

LITTLE BO-PEEP

SIMPLE SIMON AND THE PIE-MAN. Do you know the verse? It reads like this:

Simple Simon met a pieman,
Going to the fair.
Said Simple Simon to the pieman,
"Let us taste your ware."

Said the pieman to Simple Simon,
"First, let us see your penny."
Said Simple Simon to the pieman,
"Please, sir, I haven't any."

SIMPLE SIMON MET A PIEMAN

Cut these figures from different colors of paper; very dark paper for the pieman, light paper for Simon, and black for the ground. Then paste them on a good background.

HEY, DIDDLE, DIDDLE. This is a jolly group. Does the cow look as though she were jumping as high as she can? Of course you will make the moon

THE COW JUMPED OVER THE MOON

of yellow paper, the spoon and dish of something nearly white, the dog may be black, the fiddle red and the cat gray or brown. Paste them all on a good background.

CINDERELLA. Here is a cut-out which will give you some hard work to make right. But you can do it. What kind of paper shall you use for the star? You will want red for the fireplace. Do you know what the funny two-legged thing is? Ask father to tell you about that when you climb up on his lap to-night. Wouldn't you be surprised if a

fairy appeared before you and did all the things the fairy did for Cinderella? If father does not remember all that story, mother will tell it to you. When you have all these cut-outs pasted on a background, suppose you hang it on the wall near your bed. It will look pretty.

The second picture shows Cinderella trying on the slipper. What is the prince carrying in his hand? This will look well on the wall by the side of the fireplace picture.

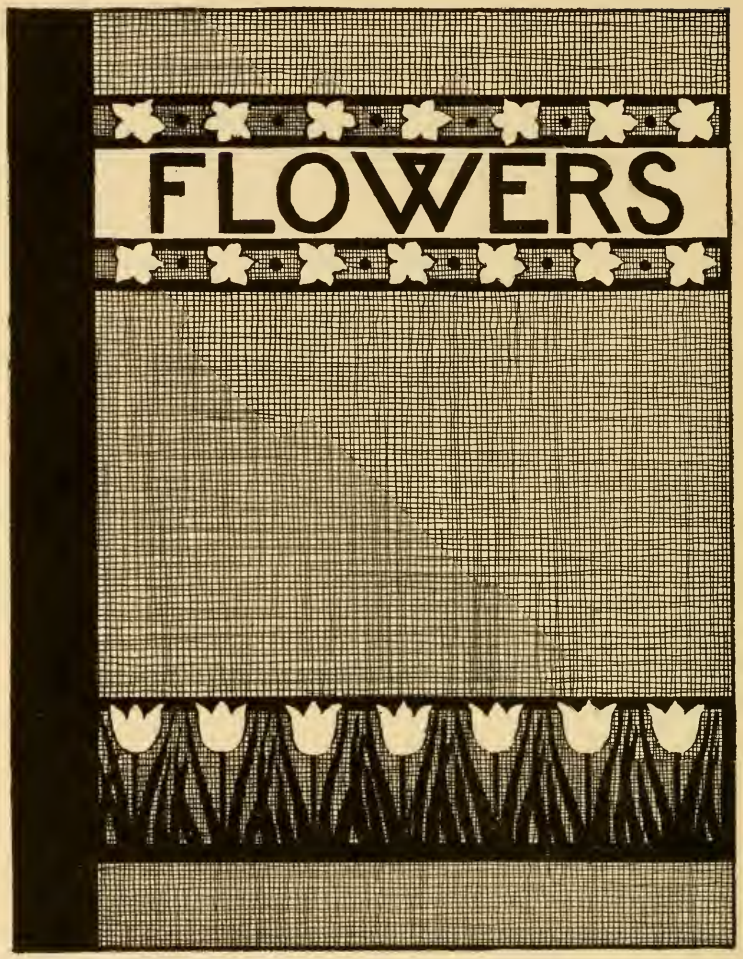
BOOK COVER. This is a good-looking book cover. It will not be hard to make. Would it make a nice cover for our pressed leaves and flowers? Or for our drawings of flowers? If we make it in colors, it will do for a cover for our painted pictures of flowers.

What kind of flowers are those that make the band across the lower part of the cover? What colors shall we use to make them? How many kinds of paper shall we need to make all the parts of the cover? Do not forget the binding. What do we call the paper that is all over cross-lines?

Notice that the artist man has shown us how to cut the letters.

OTHER THINGS TO DO WITH SCISSORS AND PAPER. Could you make furniture for your doll's house? You could cut figures out of paper tinted the right color for hands and faces, then cut dresses of other colors and paste them on the figures. You could have several dresses for each figure.

You could even make several faces for each figure. One figure could have a happy face, then you could put another face on it that would show sorrow. You could make up stories and show the pictures of the boys and girls—the way they looked when it rained and they could not go to the picnic; and when mother made a surprise for them; and when big brother came home from college. You could almost


FLOWERS


FLOWERS

make the faces tell what big sister brought each one when she came back from her vacation.

If you write your story, I think mother would like to read it. Some day you could dress up like the pictures and act the story. The neighbor children could come over to help and it would be a regular party. You could play Mother Goose or Cinderella, and sing the nursery rhymes and have curds and whey and Little Jack Horner pies to eat.

Letters and Their Sounds

There are twenty-six letters in the English alphabet. Some languages do not have so many letters; the Chinese have a great many more.

We have more sounds than we have letters, so some letters have to represent more than one sound. There are marks to show which sounds they stand for, but in writing and printing most of our books we do not use the extra marks, but simply write the letter. We think people will know the right sound, because they have heard the word spoken.

If we do not know which sound a letter represents in a word, we may possibly not pronounce the word correctly. The dictionary shows the sound of the letters in every word. A good dictionary should be in every home.

When we are learning new words, we should be careful to learn to pronounce them correctly, and to learn exactly what they mean. In that way we shall become familiar with all the words we are likely to want to use throughout life, all that the people with whom we talk will use, and most of those that are in the books that we read.

KINDS OF LETTERS. There are two kinds of letters, called vowels and consonants. The vowels are *a, e, i, o* and *u*. Sometimes *w* and *y* have vowel sounds. All the other letters, and *w* and *y* as they are often used, are consonants.

Vowels are the letters whose sounds are made by simply opening the mouth and expelling the breath; that is, they are made without any obstruction in the vocal organs. In making consonant sounds, we use the teeth, tongue, lips, and palate to stop the sound and change it. Notice, in saying *b,* how we shut

our lips together and hold the sound back until it seems almost to explode when it does come. To make the different vowel sounds, we simply hold the mouth in different positions. Say a, e, i, o, and u, and notice how you change the position of the mouth to make them sound differently.

A

The letter *a* has seven principal sounds. Used as in *baby* is called long *a,* and to show how it is to be pronounced, we mark this *a* with a long line above it like this, ā. This is the *a* we have in *cake, day, late* and *same.* Can you think of other words which have this sound of *a*?

Make a list of a number of words like *bake, cake,* etc. Make another list of some which are like *name;* like *Kate;* like *Jane;* like *bay.* Make other lists of long *a* words.

The *a* in *apple* is called short *a,* and is marked with a short curve above it, like this: ă. It is the *a* we have in *at, bat,* and the like. Make a list of some of those words. Write them in a column and be very careful to keep the right hand side of the column straight and even. Try to spell them all correctly and not to make erasures and soil the paper.

Make a list of the words like *Jack;* like *am;* like *bank;* like *fan.* Perhaps you will think of other lists you wish to make—all words with the short *a.*

Another sound which *a* has is called the Italian *a.* It is like the *a* in *arm.*. This *a* is marked by two dots above it, or ä. Think of all the ä words you can. Write them in columns like this:

arm	ark	bar
farm	bark	car
harm	dark	far

A shorter form of this sound, which we have in *ask, pass,* and *dance,* might be called the short Italian *a.* It is marked with one dot above, like this, ȧ.

Sometimes it is hard to say this *a* and not say either *ä* or *ă*. Learn which words have this sound of *a* and train yourself to speak them correctly. So many people mispronounce this *a* that you will need to look in your word book to know which words have this sound and not *ä* nor *ă*.

Broad *a* is the sound we find in *all,* and is marked with two dots below, *a̤*. This is the *a* we have in *chalk* and *awful.* Make lists of a number of these words.

Here is a short broad *a,* marked as you see with one dot below, *ạ*. It is the sound in *what, was* and *swallow.* It, too, is a bit difficult to speak exactly right. It is like short *o,* the *o* in *not* and *dog.* We do not have a great many words like this. We should make a list of the common ones and practice until we always pronounce them correctly.

A marked with a caret, as *â,* is found only before *r.* It sounds like the *e* in *ere.* Sometimes it is mispronounced to sound like the *a* in *at.* Not all *a's* which are before *r* have this sound. The *a* in carry is short *a,* and the *a* in Mary is long a. But the *a* in care and the *a* in parent are the caret *a.* We might remember that *a* before *r* in one-syllable words, and *a* before *r* in accented words of more than one syllable are quite likely to have the caret *a* sound. Make a list of words having the sound of the caret *a*; consult the dictionary to see that no errors are made.

It would be a good plan to make your lists on sheets of paper of the same size, and when you are through with all the letters, to bind the pages together to make a book. Then you can keep it to refer to when you forget just which sound of *a* a word has. You could add new words as you learn them. It would be your own dictionary with the words you want to know in it where you could find them easily.

E

The letter *e,* too, has various sounds. Long *e,* as in *key, bee, clean, beat* is marked with the long mark above, *ē,* which is used to mark all long vowel sounds. Short *e* in *nest, pet, ten,* and *end,* is marked as all short vowel sounds are, with the short curve above, *ĕ.*

The *e* with a caret above sounds like *a* with a caret, and is found only before *r,* as in *there, where.* Do not pronounce this *e* like the *a* in *at.*

The *e* with a wave line above, *ẽ,* is also found before *r* in words like *fern, her,* and the second *e* in *ever.* What sound has the first *e* in *ever*?

Sometimes *e* has the sound of long *a,* as in *eight,* and *prey.* This *e* is marked with a long line below it, *e̲.*

Would you like to make lists of the words with each of the *e* sounds?

I

The *i* in *ice* is the long *i,* and is marked with the long line above, *ī.*

The *i* in *fish* is short, and is marked with the short curved line, *ĭ.* The *i* in *bird* and *fir* is like the *e* in *her,* and is marked in the same way, with a waved line above, *ĩ.*

There is an *i* which sounds like long *e.* It is marked with two dots above, *ï.* This is the *i* in *machine.*

Make lists of words for each of the sounds of *i.*

O

The letter *o* in *pony* is long *o,* and is marked like the other long vowel sounds, *ō.* Other long *o* words are *old, bone, note.* You can think of others; make a list of at least ten.

Short *o* in *dog* and *not* is like short broad *a* in

was; the *o* in the word *dog* is not the same as the *a* in *all.* Be careful of these words. Make a list of them as you find them, so you will not be pronouncing them incorrectly.

Caret *o,* marked *ô,* is found in *or* and is used only before *r.* It is like the *a* in *all.*

The *o* in *do* is marked with two dots below, *o̤*; *o* in *wolf* with one dot below, as *o̩*; the *o* in *son* with one dot above, *ȯ.* Do you know other *o's* with these sounds?

U

Long *u* is the sound in *cube, use* and *tune,* and is marked *ū.* The *u* in tune should not be sounded like the *o* in *do,* but like the *u* itself. This is the *u* in *duty* (not *dooty*) and in *jury* (not *joory*).

Short *u,* in *tub,* and *cup,* is like the *o* in *son* and *done,* and is marked *ŭ.* Caret *u, û,* is found only before *r* as in *fur.* The sound is not like the caret *e,* but like the wave-marked *e* in *her* and the *i* in *sir.* Try to say this *u* correctly.

U with two dots below, *ṳ,* in *sure* and *rude,* is like *o* with two dots below. U with one dot below, *u̩,* in *push, sugar,* is like *o* with one dot below.

Make lists of other words with these sounds.

LETTERS THAT COME IN PAIRS

Consonant letters which sound in pairs are called *digraphs,* a word which means *two writings.* The hard sounding *ch,* as in *chick* and *child;* the soft *ch* as in *machine;* and the *ch* as in *echo* and *chorus* are the *ch* digraphs. Then there are *sh,* as in *hush* and *she; th* hard, as in *this,* and *th* soft, as in *thin; wh* in *when* and *who; ph,* like *f,* in *Philip; ; gh* like *g* in *ghost,* and like *f* in *laugh;* and *ng,* as in *long.*

There are vowel digraphs, too. *Ai,* in *sail,* sounds like long *a,* the *i* not sounding. *Ee,* in *seed,* sounds

like one long *e*. *Oo* in *moon,* marked *o͞o,* sounds like *o* with two dots below; this is called the long *oo*. In *look,* the *oo* is short, and is marked like a short letter with the short curve, *o͝o*. Short *oo* sounds like *o* with one dot below.

The digraph *ea,* in *stream,* is pronounced like long *e* with the *a* silent, or not sounding. The digraph *oa,* in *loaf,* is long *o* with the *a* silent.

Sometimes two vowels sound together to make a new sound which neither of them makes alone. The *ow,* in *cow,* and *ou,* in *mouse,* sound different than any sound made by *o* or *w* or *u*. Two vowels which sound together to make a new sound are called a *dipthong,* a word which means *two sounds.*

Sometimes *ow* is only a digraph, as in *snow*. *Ou* has another sound, like *u* with two dots below, as in *soup*. *Oi,* in *oil,* and *oy,* in *boy,* are true diphthongs.

Penmanship

ITS IMPORTANCE. Boys and girls should learn to do well those things that they will have to do every day as long as they live. It will make their work easier, they will accomplish more, and will take a very great pride in realizing that they have mastered some really important details in life.

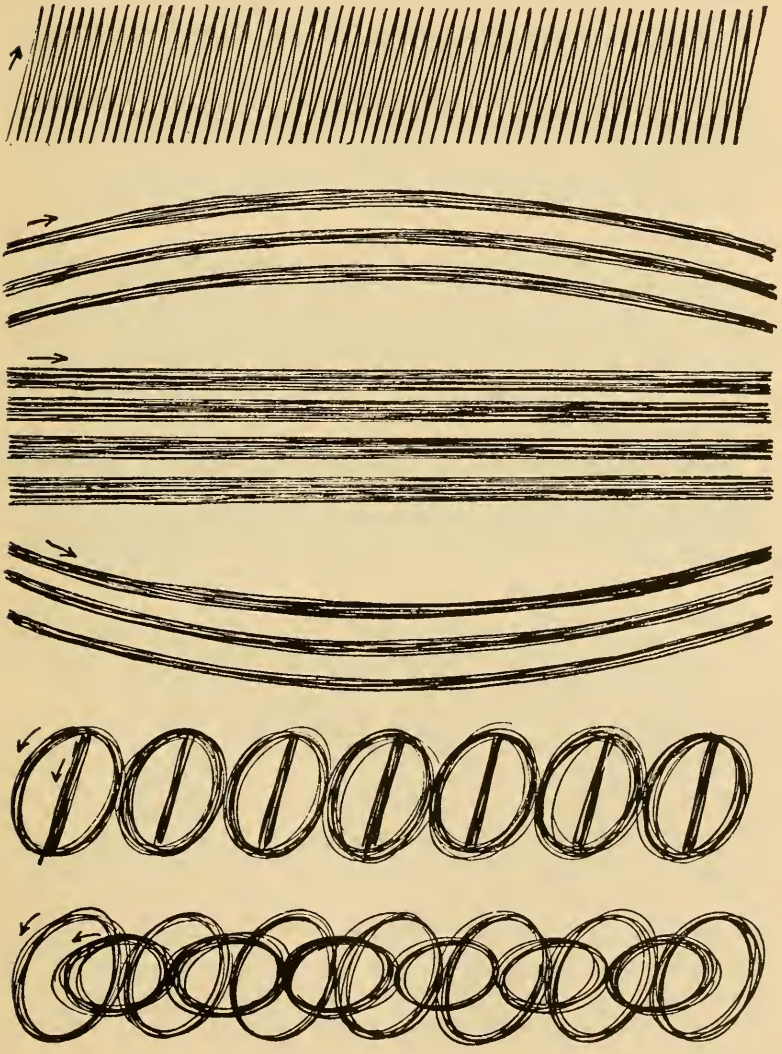
Aside from play and all kinds of recreation, what is the thing that people do most frequently? You will probably answer that they read. You are right. Everybody reads a great deal—books, papers, letters, signs, as they pass along the street or road; people do not often realize how much their eyes are used in reading. What is next in importance? We think that with most people writing comes next. Some folks earn their living by writing; they are bookkeepers or clerks, with pencils or pens in their hands all of every working day. Every person is obliged to write a little, and most everybody does a great deal of writing. It becomes important, then, to practice this art until it is not necessary to apologize for penmanship so poor that one can scarcely read it.

EASY TO LEARN. If you say you cannot learn to write well you are surely trying to make yourself believe something which is really not true. We do not mean to say that all persons can become expert penmen, but it is true that every person of average ability may learn to write well.

To become a good penman requires that you need to know how to make fifty-two letters well—twenty-six capital letters and twenty-six small letters. Only fifty-two in all, and many of these are very much alike in form.

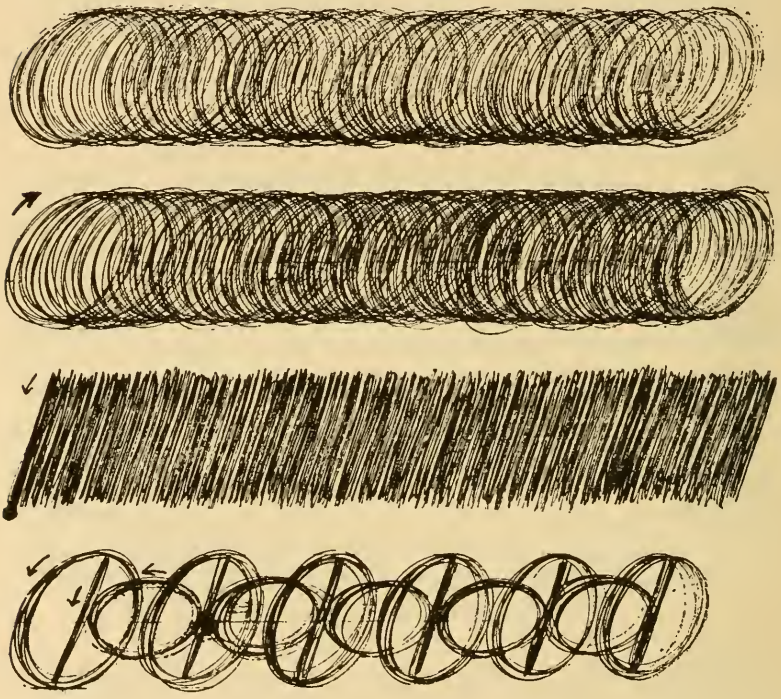
POSITION. Only one thing need be mastered be-

fore you begin to practice on the form of the letters. You must learn how to hold the pen and forearm and how to move the muscles of the arm in guiding the pen. It may be well to tell you at this point



that you will never write well or easily if you persist in writing "with the fingers"—that is, if you rest the wrist and hand on the paper and move the fingers to form the letters.

The muscular movement provides that only the ends of the last two fingers and the muscle near the elbow touch paper or desk. The thumb and first

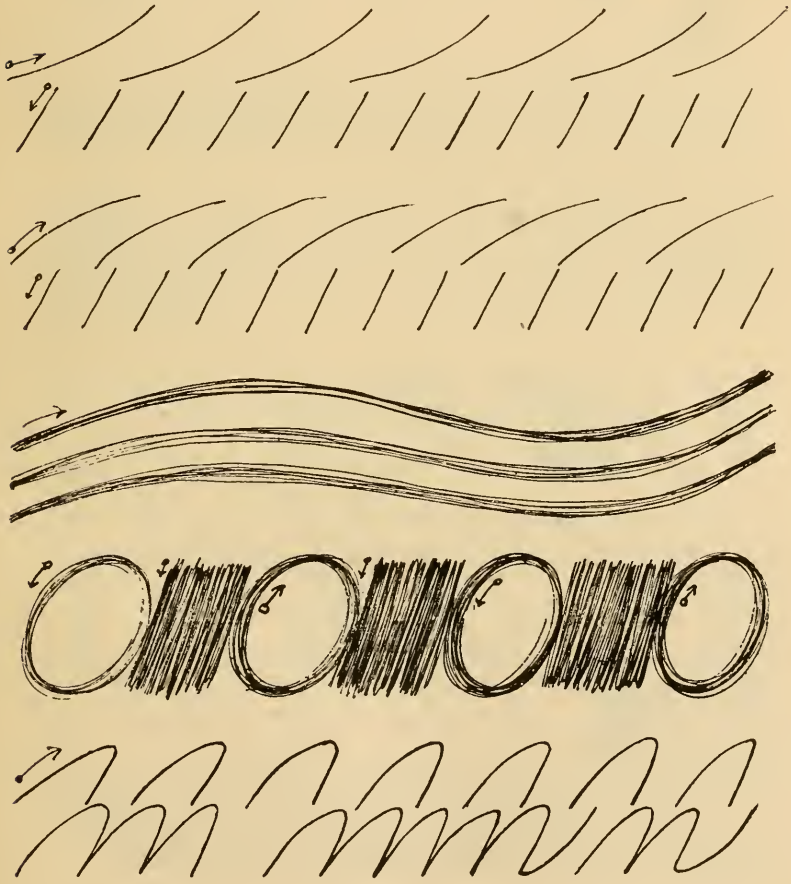


two fingers hold the pen in place, as illustrated on the large panel, with a grip only firm enough to keep the penholder from slipping. The correct position once assumed, thumb and fingers remain unmoved in their relative positions. The elbow muscle becomes the pivot on which all movement depends; it moves the pen upward and downward, and can swing it in a long arc from left to right.

EXERCISES. Make the foregoing groups of lines without moving the fingers and without lifting the pen while completing each group.

Continue to practice on these exercises until the desire to move the fingers disappears. Then with upward and downward stroke to the left practice on these straight lines until you can make them easily, using only the elbow muscle for movement.

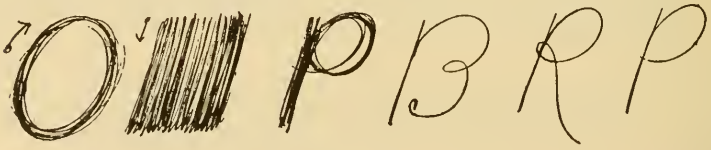
Other exercises which are very effective in developing proper movement are also given.



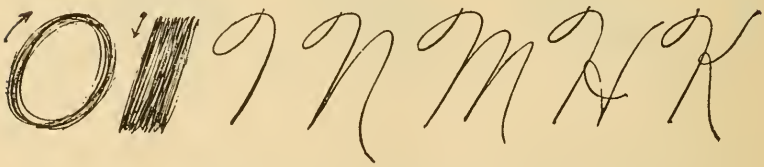
GROUPING FOR PRACTICE. Many of the letters, both capitals and small letters, are similar in form, and may well be combined for practice work. When one has learned to make the capital O well he has acquired the movement and largely the form of D, A and C; also the E combines almost the same principles. Therefore, we join in our first group O, A, C and E:

You should practice with patience on the first character, the direct oval, before attempting to form the letters which follow it.

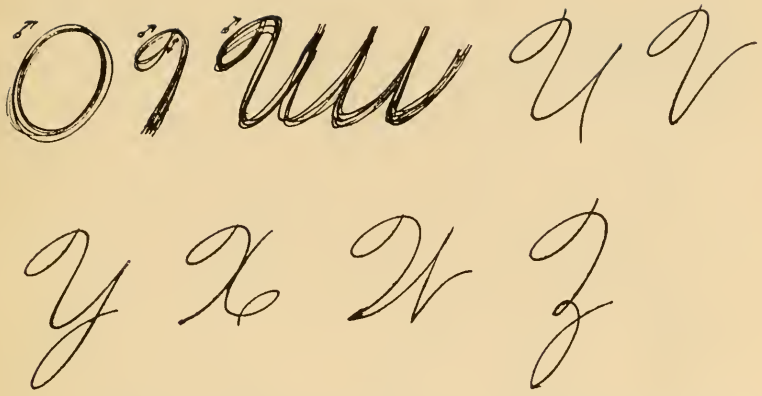
A second group includes P, B and R. Mastery of the first makes easy the other two. Before attempting the letters, practice long upon the indirect oval and the downward and upward straight lines—a push and pull exercise:



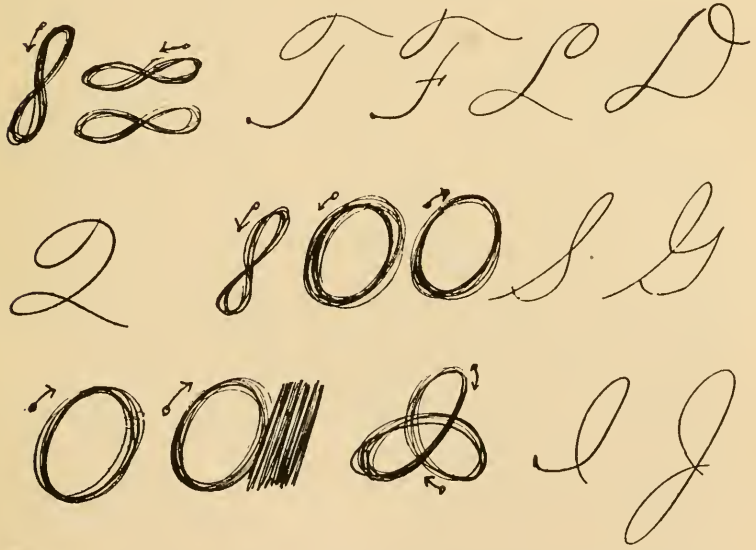
Another group includes N, M, H and K. Preceding the forms of these letters are movement exercises:



A still larger group comprises U, V, W, X, Y and Z. Practice the movement exercises first:



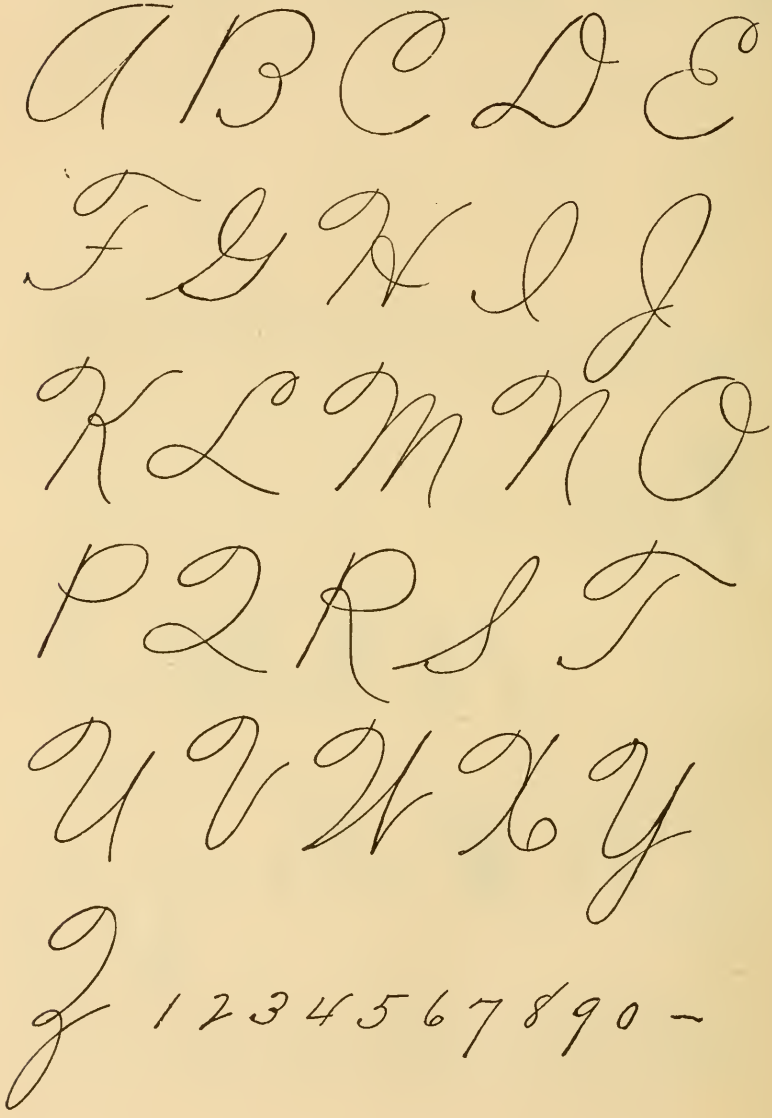
The three following groups complete the alphabet of capital letters. These are based on the figure 8 exercise and variations of it:

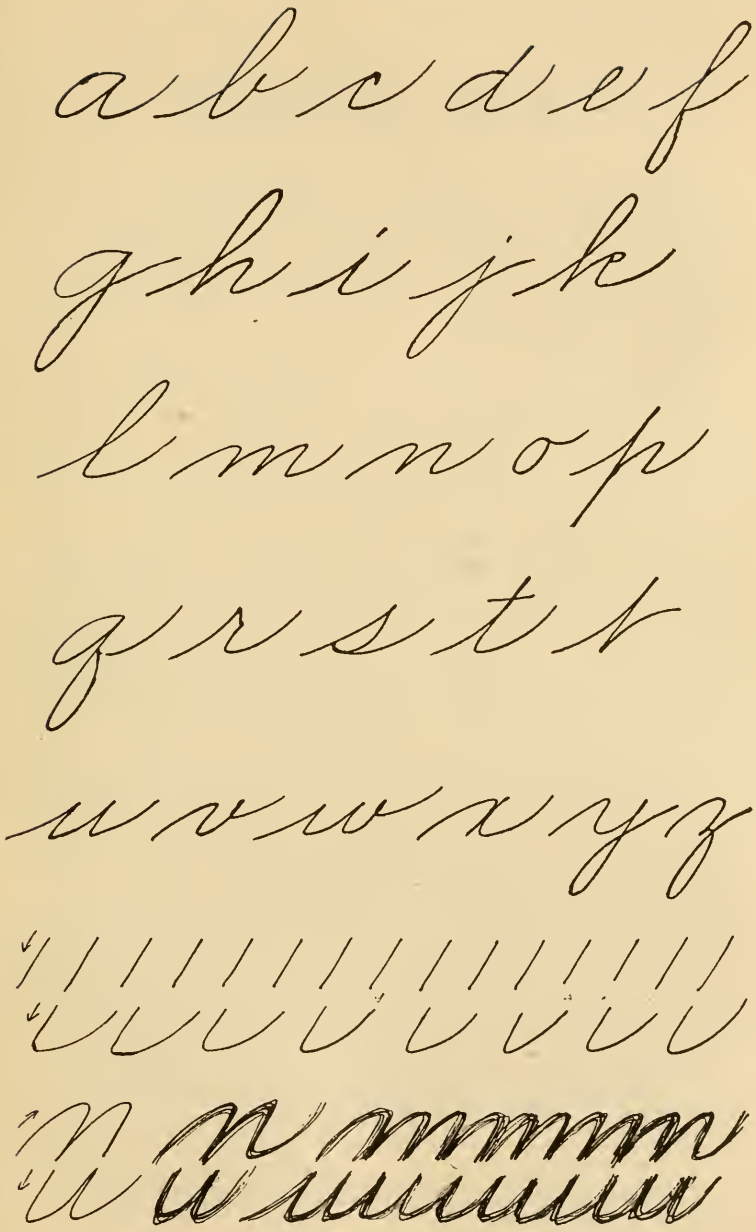


In conclusion, we place in two groups all the capitals and small letters, to serve as convenient copies for much careful practice work.

Be pleased to remember that in order to become

a good penman—one who does not have to apologize for the appearance of his handwriting—all that is needed is the will to persevere.





Letter Writing

A letter may be called a talk written down carefully on paper. There are certain forms which all who wish to do things correctly must observe in a letter, but, even so, our definition is a good one; a letter is nothing more than a conversation spelled out and put on paper.

Boys and girls are not the only ones who find it difficult to write good letters; many fathers and mothers will admit the task to be a hard one. Do you know why? It is because the writers do not express their thoughts naturally when they pick up a pen. They feel that something more is required than simple statements and plain language. From habit they may be careless in ordinary conversation; in a moment it is a thing of the past and likely forgotten, but when a thing is written it lives longer and critical eyes may see it. Therefore they feel that the language must be studied; there must be a search for the right words and for elegant expression. We will all admit that the correct word and dignified language are very desirable and add to the pleasure of reading; but remember that if you do not *think* such phrases and *talk* in the same vein you are sure to get into trouble when you try to write. Your letter will not sound like *you;* it may appear ridiculous in places, and sometimes in choosing unusual words you may set down a meaning you little intended. So, in letter writing, be *yourself;* be natural.

We said there were certain forms or parts in every good letter. These are the following:

1. The heading
2. The introduction
3. The salutation
4. The body
5. Complimentary close

In the large chart panel headed "Letter Writing" will be found these five necessary divisions of a correctly written letter. The first, second, third and fifth can be mastered by anyone in a very brief time, these need to be varied to meet many conditions, but the idea is unchanged. "Dear Willie" may be changed in your letter to "Dear Cousin Emma"; it may indicate some other relationship, or may be simply, "My Dear Friend." Like variation is necessary in the complimentary close. All the hard work is centered in the body of the letter. It contains the message.

Business letters ought to be brief. There are two good rules to follow in such a communication:

1. Write your message in as few words as possible.
2. Stop.

The reason for brevity is clear. The letter you write may be one of 500 or of 50,000 that one company receives daily, and with every employe who handles your letter time is valuable.

Which is the better of the two letters that follow, omitting all except the body, or message?

1.

Please send me one copy of Kingsley's "Water Babies." I enclose a money order for forty cents in payment.

2.

My teacher has asked me to read Kingsley's "Water Babies." There is not a copy of the book in our school library nor in the town, I believe, so will you please send me a copy? I enclose a money order for forty cents to pay for it.

The publishers would prefer to receive the first letter rather than the second. Can you tell why?

It will be excellent practice in composition for you to write a few business letters. The following subjects are suggested:

1. Write to the Atlas Publishing Company, Chi-

cago, telling them that sixteen pages are omitted from a book you bought from them. Indicate the page numbers. Ask them what they are willing to do to correct the error.

2. You need two new baseballs and a catcher's mask, or, if you prefer, two tennis rackets. Write A. G. Spalding & Bro., New York, asking for prices.

3. Apply to Adams Printing Company, of your city, for a position as messenger boy during the summer vacation. State your price. Tell why you believe you can give good service.

4. Write a letter to your father giving at least three reasons why your weekly money allowance from him should be increased; or, if you are not in receipt of a regular allowance, ask for one, and give three reasons why your request should be granted.

5. Write to the Security State Bank, Gopher Prairie, Minnesota, asking for printed matter on the subject of saving money, and inquire as to the amount it requires to start a savings account.

If you are not pleased with your first efforts, study the faults in your composition and rewrite them —several times, if necessary.

Many business letters must be comparatively long, but it is possible in every instance to write clearly what you have to say, and then resist the impulse to ramble along needlessly.

In letters of friendship it is not possible, neither is it desirable, to establish set rules. The degree of intimacy between the parties will establish one standard. A desire to joke or to be light and frivolous will make another style of composition necessary, but it might be well to urge that a letter which is intended to be all nonsense would better not be written, for it will serve no useful purpose. In personal letters there is the greatest opportunity for natural expression. Indeed, it is frequently true that a person's character can be understood from reading a series

of his friendly letters. When you express your thoughts in writing in the same natural way that you do when speaking you hold a mirror of yourself up to your friends, and in such true portrayal of yourself they are sure to derive much added pleasure.

You should practice letter writing, in order to be able all through life to write good letters; there is really no accomplishment which is more important or one which the average person has to use more often. May we suggest that you compose complete letters, as nearly perfect as possible, on the following themes. After you have finished each, study it carefully, note the places where it can be improved, then rewrite until you are well satisfied with it.

1. Write to a real or imaginary uncle out in the country, telling him of your experience in raising chickens in your village home or ask him to tell you how to plant and take care of a garden spot planted to beans and peas. Make it two hundred words in length.

2. Write to a chum who is visiting away from town telling him (or her) of the chief occurrences in town during the past week.

3. Invite a friend to visit you and tell him (or her) of the things you propose to do to make the visit pleasant.

4. Write to your absent father or mother and give a full account of your conduct during his or her absence.

5. Write to a real or imaginary sister away at school, telling her the news about her friends at home.

FORMAL NOTES. On the large panel you will find a formal invitation to a tea party, a form of acceptance and one expressing regret. It is quite proper to frame all such notes in strictly formal manner, although more intimate and personal forms may be used. In a formal manner write:

1. An invitation to a little friend to attend a May Day party at your home.

2. Accept an invitation to a party in honor of Miss Margaret Thompson's tenth birthday.

3. Express in a nice way your regret that you cannot attend a party at the home of Jerry Brown in honor of his visiting cousin, Miss Dorothy Low. Give your reason.

Common Business Forms

It is not absolutely necessary that business papers should be written according to any particular forms. They will be legal if the meaning is made clear, no matter what the form may be. However, in the many years in which modern business has been developing certain standards are accepted as best for all kinds of commercial paper, and one is expected not only to know these forms but to use them on all occasions. Not to be able to write correctly, according to custom, a check, note, draft, invoice or the like is to confess ignorance which in this age is hardly excusable.

In addition to knowing the arrangement and wording of a commercial paper one should know why certain phrases are always employed and what damage their omission may cause. To be legal in every sense, and thus make argument or dispute impossible, commercial papers of most kinds must contain certain statements of fact. These will be discussed in these pages.

NOTE. A note is a written promise by one person to pay a certain sum of money to another person at a certain time. It may specify where it is to be paid, and in what kind of money—gold, for instance—it must be paid. In notes there are always two parties to the transaction. The *drawer* is the debtor, the person who writes and signs the note, the one who when it becomes due must pay it. The *payee* is the creditor, the person named to receive the money when due.

Every note should contain the words, "For value received" or "Value received," for the law requires that to be valid a note must give evidence that what

is called *consideration,* or good value, shall have been exchanged. There must be some reason why Mr. Jarvis agrees to pay Mr. Graff. If the note merely says "I promise to pay Mr. Graff Three Hundred Dollars," nobody would know whether it was given under undue pressure or for a gambling debt, or whether it was for the performance of some illegal act. If given as a result of any of these it is not for a lawful purpose, for nothing of lawful value has passed between the parties, and it may be declared worthless. Without the words "Valued received," even if given for an honorable debt, the holder of the note might have to prove its legal nature in court; but if those words are included and appear over his signature the fact is acknowledged to everybody that the note was given for a lawful purpose.

There is another reason why a note must bear this indication of fair exchange of value. A note which is properly made out may be used as money, to a limited extent. Mr. A, for example, holds Mr. B's note for $100, and A owes Mr. C. If Mr. C is assured that B's note is good he may accept it from A in payment of A's debt to him. In such case Mr. A will *endorse* it on the back, authorizing B to pay the sum to C. Or, A may take the note to his bank and borrow money on it with which to pay C. All such transactions are based on good faith, the financial standing of the parties and the correct appearance of the note. We shall explain endorsements more at length later in this article.

In addition to the above requirements, every note must be dated; it must clearly specify the time of payment; if it is to bear interest the fact must be stated; sometimes interest is to run from the day the note is made, sometimes from the date it becomes due until the day of payment, if payment is delayed. Seldom is there a requirement as to the kind of money in which payment shall be made, but occa-

sionally a creditor will demand gold; this is really an unreasonable request. If no interest is to be paid the note should show this.

CHECKS. A check is a written order on a bank requesting it to pay to a third party a specified sum of money. The *drawer* is the person whose name is signed to it; he must have on deposit in the bank sufficient funds to cover the amount of the check. The *payee* is the person to whom the money is ordered paid. The *drawee,* the party on whom the check is drawn, is the bank.

Checks offer a really remarkable proof of the confidence people place in one another in business matters, for their use is so universal that, excepting for daily small purchases in stores, nine-tenths of the business of the country is done with checks instead of actual money. A man holding a check, properly written, for $10 or any other sum, has a right to believe it is as good as cash to a like amount.

Most checks are nicely engraved, with blank spaces for the date, the amount in figures and also in words, the number of the check, and the names of the drawer and payee. The drawee's name (the bank) is a part of the engraved portion. However, a check entirely in writing is valid; the bank looks only to see that the signature of the maker is genuine. In the woods of California, far from a town, a man once bought a vast amount of lumber and in order to close the transaction at once he wrote a check for $1,200,000 on a shingle. The payee took the shingle to San Francisco and cashed it.

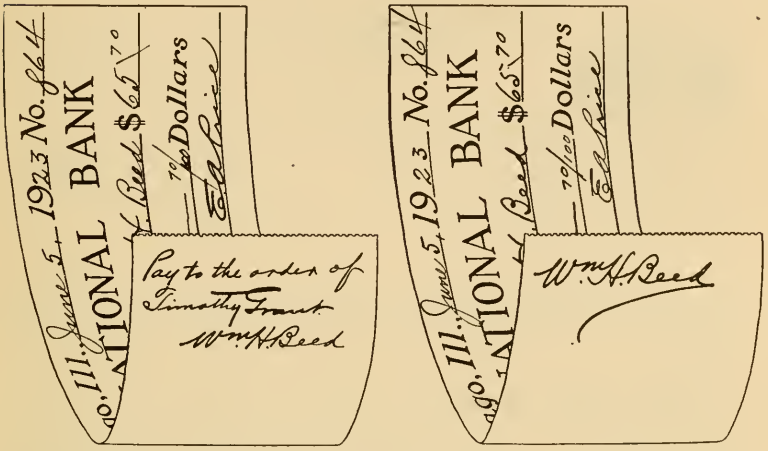
When a person opens a checking account at a bank he places his signature on a card, which is filed, and he is requested always to sign his name in the same manner on all checks he issues. The bank may properly refuse to pay out money on a check if the signature cannot be identified as the same as that on the card.

How to Cash a Check at a Bank. Do not attempt to do this unless you are acquainted with some person in the bank or have an account of your own there; in the latter event your bank book will identify you. If either of the above identifications are impossible you must take with you to the paying teller's window some person known to him. This friend assures the teller you are the person you declare yourself to be, and he becomes your guarantor. When you endorse the check on the back by writing your name, which acknowledges receipt of the money called for, your guarantor must also endorse it. In case the check proves worthless the bank holds your guarantor for the amount, and he in turn will look to you for satisfaction.

Endorsements on a Check. When you cash a check made payable to you you write your name on the back, and it must be written exactly in the form in which it appears on the face of the check. If it is payable to "Chester A. Smith," you must not endorse it "C. A. Smith," even "Chester Smith." If payable to "Mrs. Margaret Brown," Mrs. Brown may not endorse it as "Mrs. Wm. E. Brown." A married woman should use her own given name rather than that of her husband in all such transactions, for identification is simplified. There might be several "Mrs. Charles Smiths" in town, but there would likely be but one "Mrs. Josephine Smith."

Every person through whose hands a check passes before it is cashed becomes responsible for its face if it is proved to be of no value. The bank which cashed the check before it was discovered to be worthless would look to the last endorser for payment; he in turn may demand redress from any other endorser, and so on until the original signer is reached. Very seldom is a check found to be fraudulently issued, but when attempt at fraud can be proved, the laws impose penalties.

In the illustrations are two forms of endorsement. The first is the safer form to use when the check passes into the hands of another person. The words "Pay to the order of Timothy Grant" make it im-



possible that anybody except Timothy Grant or some person he names can cash the check. When Grant signs his name he acknowledges receipt of the sum for which the paper is drawn.

The first endorsement is known as *endorsement in full;* the second, as *endorsement in blank.* If Beed loses the check after he has endorsed it in blank it then can be cashed at the bank by anyone who finds it, if that person is properly identified and he in turn puts his name on it. The lesson Mr. Beed might learn from his carelessless is this: Never endorse a check until ready to part with it. The finder of a lost check might have to refund the money he received on it if the rightful owner succeeds in locating him and can prove his claim.

DRAFTS. Roscoe Carter of Chicago owes $50 to George W. Stearns of New York. He has no checking account at a bank, so he cannot send a check.

He may go to a bank with the required sum and ask the bank to send it to Stearns. He will receive to mail to Stearns what is known as a bank draft. It will appear as in the illustration below:

THE PEOPLES TRUST AND SAVINGS BANK
OF CHICAGO
CHICAGO, ILLINOIS

No. 12876

CHICAGO, Oct. 30 1923 $50.00

PAY TO THE ORDER OF George W. Stearns

FIFTY DOLLARS

TO CHEMICAL UNION BANK
NEW YORK

J. W. Watson
PRES.
CASHIER

Carter mails the draft to Stearns, who cashes it or deposits it in a bank to his credit, and the debt is paid.

How does the bank carry through this transaction? Every large bank in each city has a working relation with some bank in all cities of importance. Each maintains a credit with the others. In this instance, when Carter buys his draft, for which service the bank charges him a few cents, the local bank credits the New York bank with $50; when the New York bank pays the draft it debits the Chicago bank a like amount. Two persons have thus settled their accounts and two banks have performed a service, but not a cent in money has passed between the two cities nearly a thousand miles apart.

Another common form of draft is here explained. The Johnson Chemical Company of Detroit wishes to collect a debt of $20 from John B. Stiles of Cleveland. A draft will be prepared in the office of the former, in one of two forms. The form usually prevailing is the first shown on page 65.

The draft thus prepared will be mailed to the Cleveland bank, whose employes will present it to Stiles for payment. Out of the $20 the bank will

JOHNSON CHEMICAL COMPANY
DETROIT, MICHIGAN

No. 1483

DETROIT, Nov 25 1924

PAY TO THE ORDER OF Security Bank of Cleveland

Twenty ——— DOLLARS

AND CHARGE TO THE ACCOUNT OF

JOHNSON CHEMICAL COMPANY

TO Jno B. Stiles
Cleveland, O.

BY E W James
TREASURER

retain 10 cents or 15 cents as collection fees and will remit the proceeds to Detroit. The other form, quite frequently employed, is shown below:

JOHNSON CHEMICAL COMPANY
DETROIT, MICHIGAN

No. 1483

DETROIT, Nov 25 1924

PAY TO THE ORDER OF Ourselves

Twenty ——— DOLLARS

AND CHARGE TO THE ACCOUNT OF

JOHNSON CHEMICAL COMPANY

TO Jno B. Stiles
Cleveland, O.

BY E W James
TREASURER

The Cleveland bank is not authorized to demand payment on this draft in its present form; the Johnson Company, when the draft is written, must endorse it on the back, as follows:

Pay to order of Security
Bank of Cleveland
JOHNSON CHEMICAL COMPANY
BY E W James
TREASURER

From the above discussion of drafts it is clear that, as in checks, there are always three parties involved. As in checks, the person or firm with which the draft originates is the maker, or more properly, the drawer; the person on whom demand for payment is made is the drawee; the bank which collects the money for the drawer is the payee, although when the bank makes remittance of the proceeds the original drawer is discovered to be the payee. The bank stands as the drawer's agent in making the collection. In the bank draft first discussed the bank of issue is the drawer, acting for the debtor; the person to whom the money is to be paid is the payee; the bank on which the draft is drawn in the distant city is the drawee.

INVOICES AND STATEMENTS. In modern business, if a person purchases a bill of goods for which he is to pay at a future date the seller provides him with an itemized list of such purchases. It specifies the number of each kind of merchandise bought, the cost of each individual piece or lot, and the total cost of each kind. Such a complete list is called an invoice, or in commoner term, a "bill of goods."

Printed forms have come into universal use, thus shortening clerical labor in the preparation of invoices. The form given on the large panel is similar to all; slight changes are sometimes employed to meet varying tastes.

STATEMENTS. A statement is a summary of purchases made by one person during one month, or possibly a longer period. Because an invoice lists every item and the total of all items, it is unnecessary to repeat this information in a statement. Therefore the latter merely presents the totals of each day's purchases. The form shown on the large chart panel is in very general use.

RECEIPTS. A receipt is a written acknowledgment that certain valuable things, such as money or

goods, have passed from the possession of one person to the hands of another. One who wishes to pay money to another may properly refuse to do so if he is refused a receipt showing the transfer. If a payment closes an account it is proper to have the receipt acknowledge the fact by the words, "Received of... ....., in full of account."

EXERCISES. In the absence of printed forms our boy and girl friends will be obliged to write all the papers called for below, unless through the kindness of father or his friends regular printed forms can be obtained.

FORMS FOR PRACTICE. 1. John Jones buys a cow for $50 from William Smith and gives a note due in four months, without interest. Write the note and ask father to criticise its form.

2. Joseph Wilson gives Henry Blake a thirty-day note for $75 in payment of a debt. It is to draw 6% interest per annum, and is to be paid at the People's Bank. Write the note.

3. Arthur Brown owes Charles Curtis $325. Curtis demands a sixty-day note, with interest at 7% if not paid when due. Write the note.

4. Moses Thompson agrees to accept a 60-day note for money due him from Thomas Scott. There is to be no interest charge.

5. Write a note between the same parties; time, four months; amount, $24.75; interest, 6% from date.

6. Write a check on the Culver National Bank for $80, payable to Henry Rice. Sign it.

7. John Peters owes Job Francis $100. Claude Wells owes John Peters a like amount. Write a draft which will provide for settlement of all claims.

8. Suppose you buy from Jenson & Company on June 3, one stove, $35.00; 50 feet rope, at 4 cents per foot; one cultivator, $27.50; and on June 17 you buy 15 pounds of nails, at 7 cents per pound;

one handsaw for $1.75; 10 gallons of gasoline, at 19 cents per gallon.

a. Make an invoice for each day's purchases.

b. Write a monthly statement as coming from the merchants, dated July 1.

c. Write such a receipt as would be given you when on July 10 you pay $5.00 on account.

d. Write the receipt which ought to be given when on July 25 you pay the balance.

Number Work

TO PARENTS. Boys and girls should be made to understand at an early age that there are at least two branches of education which they must master if they wish to achieve any of the elements of success in life. These are reading and arithmetic. Many persons unable to read have become prosperous; they have succeeded to a degree because they were shrewd enough with figures to carry on ordinary transactions. It is hard to conceive success as coming to any man who does not understand the rudiments of mathematics.

Liberal space is given on the chart panels of this desk to number work, arithmetic and measures. The elements of number work are presented pictorially, in accordance with approved methods of teaching, and thus the child is drawn naturally into his first exercises in numbers. Parents can assist in laying solid foundations in mathematics in the child's mind by encouragement and sympathetic assistance, as it may be required.

TO BE READ AND EXPLAINED TO THE CHILD. In one corner of the chart on number work you see ten figures:

0 1 2 3 4 5 6 7 8 9

With these ten figures we do all of our work in arithmetic; they are called *Arabic* figures, because many hundreds of years ago people of Europe found them in use among the Arabs in Asia and Africa and they took them for their own use because they were so much handier than their own Roman letters. The Roman letters are I, V, X, L, C, D and M, standing for 1, 5, 10, 50, 100, 500 and 1,000. These Roman

numerals are no longer in use in our everyday work, but we can see them carved in buildings to denote the year of construction, and we also see them on the backs of books to denote the number of the volume, and, we find them also in a few other places of no real importance.

The Arabic figures are the basis of all arithmetic; they will be necessary in all the figuring you will do in every problem that you will meet in even the smallest problems of business later on. You will use arithmetic when you buy a slate, or a pair of shoes, or a railroad ticket.

LESSONS IN NUMBER WORK. Let us read the names of the figures and study their form:

EXERCISE ONE.

Naught one two three four five six seven eight nine

0 1 2 3 4 5 6 7 8 9

You see here how all the figures are written, but you will notice when father makes figures he makes the 4 and the 9 look a little different, because the form he uses is easier to make. He will show you how to make them his way. Practice making these figures a great many times, copying those on the chart and see how good you can make them look.

EXERCISE TWO. *Addition.* On the chart you see that one box and one box are two boxes. You see that one book and two books are three books. You see that one apple and three apples are four apples. You see that two apples and two apples are four apples. You see that two vases and three vases are five vases. You see that one vase and four vases are five vases. Here are two ways of writing these sums.

$1+1=2$ $1+3=4$ $2+3=5$

$2+1=3$ $2+2=4$ $1+4=5$

1	1	1	2	2	1	2	3	3	4
+1	+2	+3	+2	+3	+4	+1	+1	+2	+1

EXERCISE THREE. *Dominoes.* Add the white spots on each domino in the first row, in this way: "2 and 1 are 3"; to have it look like father and mother write it, use a little cross instead of the word *and* and two short straight lines instead of the word *are.* Your addition will then look like this: "2+1=3; 2+2=4; 2+3=5, etc."

What is the sum of all the spots on the first row of dominoes?

What is the sum of the spots on the first domino in each of the three rows?

What is the sum of the spots of the second domino in each of the three rows?

EXERCISE FOUR. On the panel are four little boxes, and in each are two numbers to be added. Can you add them correctly? Practice until you can add all four quite rapidly.

Do you see the columns of figures on the chart? There are four columns with thirteen figures in each column and there are two columns with four figures in each column. Can you add the two short columns in one-half minute?

Can you add each of the long columns in one-half minute? Practice this until you can do so.

EXERCISE FIVE. Do you see the wheels with rows of figures in the circles? Look at the first one. There is a lot of work there for you to do.

In the center circle you find the figure 8. The 8 is to be added to all the figures in the next circle. When you have practiced this until you can add them rapidly, then you are to add 8 to each of the figures in the other circle.

EXERCISE SIX. *Subtraction.* Do you see on the panel four little boxes, each with two numbers just above the word *subtraction?* The first tells you to subtract 4 from 8. This means that if you have eight apples and you take 4 of them away, how many will you have left? Place 8 toothpicks in a row; take

away 4 of them and give the number that you have left. You will see that 4 remain.

Place 9 toothpicks in a row and take 6 away; you will see that 3 remain. This process is called subtraction. There are five little problems in the upper right-hand corner of the chart. Can you write down the answers to the five quickly?

EXERCISE SEVEN. Look at the second wheel; in the center circle is the figure 5, with a dash before it. The dash is the sign for *subtraction*. This 5 is to be subtracted from each of the figures in the second circle. When you can do this quickly, then you may subtract 5 from each of the numbers in the third circle. In writing numbers for subtraction, you must write the larger number first, and the smaller one below it, for when you subtract you always take the smaller sum from the larger.

EXERCISE EIGHT. *Multiplication.* Multiplication is a process of finding the result of taking a number a certain number of times.

In the third wheel the figure 4 is shown in the center circle; this is to be multiplied by each of the figures in the other two wheels. The little cross before the figure 4 is the sign of multiplication.

Right above the figure 4 in the center wheel is the figure 3; our problem is to find the result of repeating the 3 four times. You can put it down as follows: $3+3+3+3=12$. You see we have put 3 upon 3 four times; we can state this more simply in this way: $3\times4=12$.

In the same way multiply 4 by the numbers in the second circle by 4. Work on this until you can perform all of the eight little examples in one minute. When you can do this, multiply all the numbers in the outer circle by 4. See how long you will have to practice in order to do this in one minute.

EXERCISE NINE. *Division.* Division is the process of finding how many times one number is con-

tained in another. In the fourth wheel the center circle contains the number 3. To the right of the 3 in the second circle is the figure 9. Our problem is to find how many 3's are in 9, or how many times we must take 3 to make the result 9. You will see that $9=3+3+3$. In our problem of multiplication we found that $9=3\times3$; in division we write our problem like this $9\div3=3$. The sign which means division is a straight line with dots above and below it.

Divide all the numbers in the fourth circle by 3; practice until you can get answers to these eight problems in the shortest possible time. When you can do this well, divide the numbers in the other circle by 3.

EXERCISE TEN. In the first circle where numbers are added, use the figure 7 instead of the 8 in the inner circle and add 8 to each of the figures in the other circles.

In the second circle instead of using 5 to subtract, use 7. From all the numbers in the two outer circles subtract 7.

In the third circle instead of the 4 in the smallest circle, use 5. Multiply the numbers in the two outer circles by 5.

EXERCISE ELEVEN. Solve the following problems; see if you can get the correct answer to each the first time you try:

1. Jennie received 17 cents from her father, 11 cents from mother, 6 cents from brother Will and 9 cents from Aunt Harriet. She lost 4 cents, gave 7 cents to her cousin Emily and 3 cents to her little sister. She thought then she would have 30 cents left. Had she?

2. Helen had five turkeys. She sold them to a merchant at $3 each. She purchased a doll for $2, a pair of shoes for $4 and two yards of silk at $1 a yard. How much money did she have left?

3. Margaret went on her vacation. The train which she rode on for three hours made an average speed of 28 miles an hour. She then rode in an automobile for two hours, which traveled at the rate of 25 miles an hour. Margaret was then at her aunt Bertha's home. How far had she traveled in the five hours.

4. Courtland deposited in the Desk Bank the following amounts: 40 cents, 72 cents, 38 cents, 63 cents and 84 cents. What was the total of these deposits?

5. A man left an estate of $70,000. He gave a daughter $20,000, a son $15,000 and a granddaughter $5,000. He gave three times as much to a church as he gave to his granddaughter and one-half as much to a school as he gave to his daughter. The remainder of his estate he gave to a grandson. How much did the grandson receive?

6. Edna had $2, Opal twice as much as Edna, and Louise as much as Edna and Opal together. Together they put their money into an outing fund. They spent $1 for a boat, $6 for food, $1 for fishing tackle, $2 for a camera, and $2 for a tent. How much money was left in the fund?

7. How many days are there in April, May, June, July, and August?

8. Courtland received 85 in Arithmetic, 79 in Grammar, 89 in History, 92 in Geography, 85 in Writing, and 86 in Spelling. What was his average in these studies?

9. Mrs. James paid $2 a bushel for apples. The amount of her bill was $12. How many bushels did she buy?

10. How many dozen oranges, and how many over are there in a box containing 147 oranges? 175 oranges? 183 oranges? 195 oranges?

Arithmetic

TO PARENTS. The study of arithmetic begins with the realization of the simplest numbers and what they mean, by counting and identifying units and groups, as from 1 to 5, to 10, and upwards. Thus the child is made familiar with the simplest combinations of numbers, and the foundation is laid step by step for subjects of addition, subtraction, multiplication and division. These four are the fundamental principles of mathematics. On the preceding chart we have presented some of the simplest elements, intended as exercises for small children, under the guiding hand of the parent when necessity requires.

The exercises which follow are for minds a little more mature—for children whose ability to think for themselves is a little more highly developed. They are better able now to analyze situations, and naturally should require less help from their elders. Parents can be of more service to their boys and girls by encouraging independent thought and research than by rushing to their assistance at every trying moment and doing their work for them. Do not throw them absolutely upon their own resources; watch to see that the weight of their troubles does not discourage them.

EXERCISES IN ARITHMETIC

FACTORS. Any two, three or more numbers which when multiplied together produce a certain number are known as the *factors* of that number. The chart panel tells you that the factors of 6 are 2 and 3. We

find this to be true by multiplying 2 by 3; the product is 6.

The factors of 8 you may say are 2 and 4; this is correct, but 4 is not the lowest factor you can use, for 2 and 2 are factors of four. So here we learn what *prime* factors, or the lowest possible factors are. In resolving a number to its simplest factors we search until we have factors which cannot be further divided. Here is a good example:

$48 = 8 \times 6$
$48 = 4 \times 2 \times 6$
$48 = 2 \times 2 \times 2 \times 6$
$48 = 2 \times 2 \times 2 \times 2 \times 3$; these are the prime factors of 48.

EXERCISE ONE. Find the prime factors of 32; 52; 78; 144; 208; 512.

FRACTIONS. A fraction is one or more of the equal parts of a number or one of the equal parts of an object. One apple cut into two equal pieces is said to be cut into halves; one-half of an apple added to one-half of an apple equals one apple. If you cut an apple in this way the size of each part is represented as ½; this is a *fraction.* The lower figure is called the *denominator,* a rather long word; it shows into how many equal parts a thing is divided; the figure above the line is the *numerator,* which names the number of parts of the whole thing which are taken.

The first black and white square in the upper right-hand corner of the chart illustrates a whole number, as 1, or 1 square foot, or 1 acre, or 10 acres or 50 acres, or any other unit of measure; the second and third figures represent one-half of the same unit and three-fourths of the same thing. In the third figure, the ¾ means that the unit is divided into 4 parts, and 3 of these are taken.

EXAMPLES. 1. If the first figure represents 1 acre of ground and is worth $100, what will the fractional part in the second figure be worth? in the third figure?

2. If the entire first circle in the second row of figures represents a pond containing 3 acres, how many acres in the black portion? How many acres in the black portion of the second figure? In the third?

3. The six-sided figures are called *hexagons* (hexagon means six-sided). If the first entire hexagon represents a pie worth 60 cents, what is the black piece worth? In the second hexagon what would you have to pay for the black section, at the same rate of cost?

4. How much larger is the black part of the third hexagon than the black part of the first one? of the second?

KINDS OF FRACTIONS. If a fraction is less than the unit one it is called a *proper fraction;* if its value is a whole number or a whole number and a fraction it is an improper fraction. Thus, ½, 1/3, 3/5, 8/15 are proper fractions, for each is less than 1, while 5/2, 8/5, 14/6, 12/4 are improper fractions, for the value of each is greater than 1; 5/2 = 2½; 8/5 = 1 3/5; 14/6 = 2 2/6 = 2 1/3; 12/4 = 3.

ADDITION OF FRACTIONS. You cannot add 2 horses and 2 plows and get one number for a result; neither can you add ¼ and ½. You can add only *like* things, as 2 horses and 2 horses, which gives 4 horses as a result.

In adding fractions we must make them alike with respect to their denominators. We see that ¼ and ½ are not alike; but we know that ½ equals 2/4. So in adding these two we must have the common denominator 4. Thus the problem is solved in this way:

$$¼ + ½ = ¼ + 2/4 = ¾$$

In the same manner we add:

1/4+1/8=2/8+1/8=3/8
1/5+1/3+1/6=6/30+10/30+5/30=21/30.

Add 1/3+1/4+1/2=? 2/5+2/3+3/4=? 5/6+1/2+3/4=?

SUBTRACTION OF FRACTIONS. We found we cannot add 2 plows and 2 horses, and we know as well that we cannot subtract 2 plows from 2 horses. Neither can we take ¼ from ½ until we make them alike by giving them like denominators. We know that ½ = 2/4. Now our problem can be solved as follows: 2/4 − ¼ = ¼. Because you cannot take a larger number from a smaller one, the larger number is written first, and the smaller is taken from it. In like manner subtract:

3/5−1/2=? 5/12−1/3=? 15/16−3/8=?

Your mother gives you ¾ of a dollar. You spend 1/5 of it for a book. How many cents have you left?

A man bought ⅞ of a pound of meat, but the bone in it weighed 1/6 of a pound. How much of his purchase was meat?

MULTIPLICATION OF FRACTIONS. The simplest form is that shown in the following illustration: 2/3 × ¼ = 2/12 = 1/6. We multiply the numerators together for the numerator of the product, and the denominators together for the denominator of the product. The result of the multiplication is 2/12, which can be reduced to lower terms by dividing by 2, so we have 1/6 as the final result. The process can be shortened by cancellation, that is, by division before the product is reached, as follows: 2/3+1/4=1/6.

MULTIPLY: 3/5 × ½ = ? 4/7 × 2/3 = ? ⅝ × ½ × 3/5 = ? (Cancel the 5's by dividing each by 5.) 2/11 × ¼ × 2/5 = ?

A mixed number is one containing a whole number and a fraction, as 3 2/3. In the following problem we are required to multiply 4 by 3 1/3. We can perform the work by two processes. In the first we multiply 4 by 3 and 4 by 1/3 and add the products, to get our result: $4 \times 3 = 12$; $4 \times 1/3 = 4/3 = 1\ 1/3$; $12 + 1\ 1/3 = 13\ 1/3$. A better form, when you once understand the principle, is found in reducing the mixed number to an improper fraction ($3\ 1/3 = 10/3$) and proceeding in this manner: $4/1 \times 10/3 = 40/3 = 13\ 1/3$.

Multiply: $6 \times 3\ 5/12$ (can you cancel here?) $10 \times 4¾$ (can you cancel here?); $14 \times 2/7 = ?$

A man sells 11¼ quarts of milk at 10 cents per quart. How much money does he receive?

In multiplying a mixed number by a mixed number, reduce both to improper fractions, then proceed as we have shown you above. For example: $3\ 1/3 \times 4\ 1/2 = 10/3 \times 9/2 = 90/6 = 15$, or $10/3 \times 9/2 = 30/2 = 15$, by employing cancellation to shorten the work.

Multiply: $6¼ \times 5\ 2/3 = ?$ $7\ 2/3 \times 6⅛ = ?$ $5\ 7/11 \times 6½ = ?$

How far is it around a room that is 12 1/3 feet long and 9½ feet wide? How much longer are the two sides than the two ends? (Solve the problem by multiplication and addition.)

Mr. Brown received 4/5 of the income from a farm, and spent 5/8 of what he received. If the whole income from the farm was $2,500, what part of his portion had he remaining?

DIVISION OF FRACTIONS. One fraction may be divided by another by changing them to fractions which have a common denominator, and then dividing the numerators. Example: $4/5 \div 1/3 = 12/15 \div 5/15 = 12/5 = 2\ 2/5$.

The same result is obtained by observing this rule: Invert the terms of the *divisor* (the second of the two

fractions, the first being the *dividend*) and proceed as in multiplication. Example: $4/5 \div 1/3 = 4/5 \times 3/1 = 12/5 = 2\ 2/5$.

Divide: $1/2 \div 1/4 = ?$ $1/4 \div 1/9 = ?$ $4/5 \div 2/9 = ?$ $11/15 \div 1/3 = ?$ $4\ 1/3 \div 2\ 1/2 = ?$ $22/27 \div 11/3 = ?$ (cancel wherever possible).

If you have a room 15 feet long and 12 feet wide how many strips of carpet ¾ of a yard wide will be required to cover it? How many yards in all the strips?

A man owned 6 acres of land which he divided into lots of ⅜ of an acre each, and sold each lot for $200. How much money did he receive? If the 6 acres cost him $400 an acre, did he gain or lose, and how much?

Divide: $3\ 1/2 \div 4\ 1/3 = ?$ ($3\ 1/2 \div 4\ 1/3 = 7/2 \div 13/3 = 7/2 \times 3/13 = 21/26$.) $4\ 5/9 \div 3\ 2/5 = ?$ $6\ 7/8 \div 3\ 5/9 = ?$ $12\ 4/7 \div 3\ 7/8 = ?$

Read these two problems: $5\ 1/6 \div 4\ 2/7 = ?$ $\frac{5\ 1/6}{4\ 2/7} \div ?$

Are they alike? They are, as in solving the latter it takes the form of the first, as follows: $\frac{5\ 1/6}{4\ 2/7} = 5\ 1/6 \div 4\ 2/7 = 31/6 \div 30/7 = 31/6 \times 7/30 = 217/180 = 1\ 37/180$.

Solve the following, by reducing to simplest form: $\frac{15\ 6/7}{8\ 2/3} = ?$ $\frac{8\ 3/7}{6\ 15/16} = ?$ $\frac{3\ 4/5 \times 8\ 1/2}{4\ 1/3 \times 5\ 3/8} = ?$

THE CIRCLE. A circle is a plane curved figure every point of which is equally distant from a fixed point within called the center. The illustration on the large chart panel gives the name *circumference* to the entire distance around the curved surface. This is a word we get from two Latin words, which mean *to bear* and *around*. The straight line passing through the center is the *diameter,* a word which

means to *measure through.* It divides the circle into two equal parts. One-half of the diameter is called the *radius.*

By a problem which children cannot understand, but which they learn later in high school, it is proved that the distance around the circle, or the circumference, equals the length of the diameter multiplied by 3.1416, which is practically 3 1/7.

You need not take the word of older people for this, however, for you may prove it for yourself. Measure the diameter of a wheel, then multiply the diameter by 3.1416. Then measure with a tape the circumference. You will find it to be almost exactly the same as the result of your problem.

By higher mathematics you will learn some day that if you square the radius (multiply the radius in feet or inches by itself) and then multiply this product by 3.1416 you will have found the *area* of the circle, in square inches, square feet, square yards, or other higher denomination in square measure.

Knowing these two simple rules, you will be able to solve a good many interesting problems.

1. A circle is drawn in a square each of whose sides is 6 inches. Answer these questions:

(a) What is the diameter of the circle?

(b) How long is the radius?

(c) What is the circumference, in inches?

(d) What is the area of the circle?

2. Draw a picture of a stake driven into the ground and a rope stretching out from it for 40 feet. Suppose a cow were tied to this rope end.

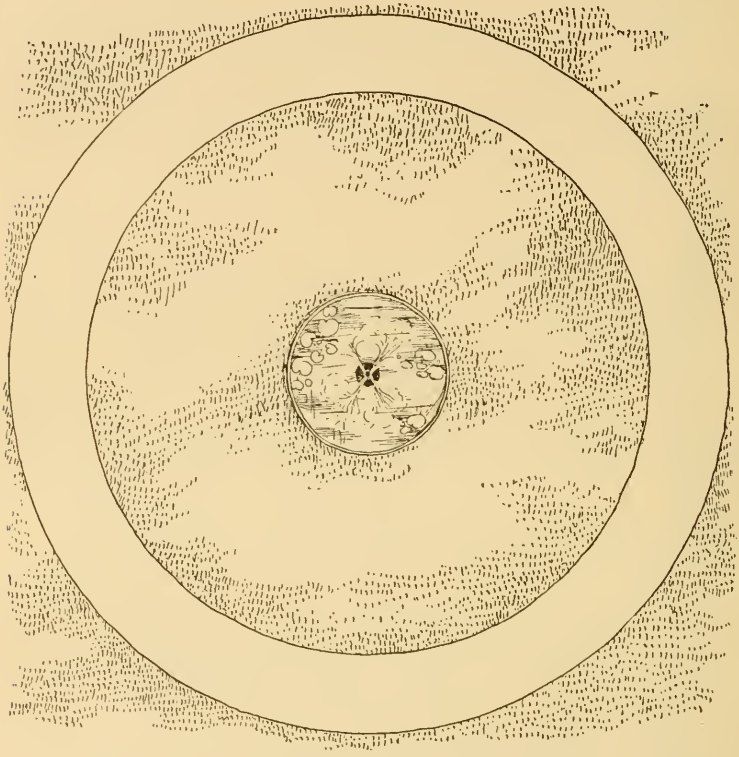
(a) Would the rope represent the diameter or the radius of the circle over which she could graze?

(b) If the cow walks around the stake, keeping as far from it as the rope will permit, how many feet will she travel? How many yards?

(c) Over how many square feet can she graze?

3. There is a circular fountain with a diameter

of 8 feet. Around it is a circular walk 4 feet wide, beginning 10 feet away from the edge of the fountain.



The Fountain, Grass and Circular Walk

(a) What is the circumference of the fountain?
(b) What is the area of the fountain?
(c) What is the area of the plat 10 feet wide which surrounds the fountain?
(d) What is the distance around the inner side of the walk?
(e) How far around the outside of the walk?
(f) What is the area of the walk in square feet?
(g) What is the combined area of walk, the inner vacant space and fountain?

(h) How much would it cost to build the walk at 70 cents per square foot?

EXERCISE TWO. DECIMALS. How many cents are there in a dollar? What part of a dollar is 1 cent? You will write this fraction 1/100, but if you write as people do in terms of money the one-hundredth part of a dollar is expressed as .01. The form 1/100 is a common fraction; the form .01 is a decimal, or decimal fraction. The forms 1/100 and .01 represent the same value. The period (.) here represents the units in numeration, and the 1 the one-hundredth; so there must be one more decimal place. There are no tenths in one-hundredth, so we fill out the tenth's place with a naught, thus, .01.

Write the decimal which stands for 5/100, 15/100, 35/100.

Write the decimal which stands for 10/100. It is written .10, but as 10/100 equals 1/10, when reduced to its lowest terms, we can write the decimal .1; thus we see that naughts to the right of a decimal have no value.

When we say, Write in decimal form 12 and 26 hundredths we understand that 12 is a whole number and 26 hundredths is a decimal; the word *and* gives us the location of the decimal point. So we write the problem as 12.26.

Write in decimal form:

18 and 42 hundredths

41 and 6 hundredths

8 and 6 thousandths

142 and 47 thousandths

Problems:

How many minutes in .75 of an hour?

How many pounds are there in .25 of a ton?

Express decimally: 175 hundredths; 175 thousandths; 175 tenths.

SQUARE MEASURE AND CUBIC MEASURE. On the large panel are one single block, a row of ten blocks,

a square surface of ten rows each with ten blocks and a figure showing ten of these square surfaces one upon another.

These are to illustrate truths in measurements in arithmetic. Lay 10 rows of single blocks in a line, shown in diagram *b*. Place 10 of these rows together, as in diagram *c*. How many single blocks are represented? If you count them you will find the number to be 100. How may we know this without counting? There are 10 rows in length, and there are 10 in width, or breadth. If we multiply the length (10) by the breadth (10) the product is 100. If there were only 6 rows in breadth the product would be 60. If the surface of each small block (*a*) were one square inch, how many square inches in the surface of *c*?

In *d* in the top layer we have found there are 100 of the little square surfaces. There are ten of these layers, each with 100 squares. How many of the blocks marked *a* are in the figure *d*? If you were to count them you would find the number to be 1,000. By a simple process we multiply the length (10) by the breadth (10) and then this product by the thickness (10) and find 1,000 to be the *solid contents,* or *cubic* measure.

Measurements

Boys and girls do not realize that our measures and weights, such as inch, foot, yard, mile, pound, ton, etc., have not always existed in civilized countries. We are going to tell you something about their story, which really extends over many hundreds of years. Indeed, their history dates back nearly three thousand years, and even before that the people of more ancient times were using simple methods to measure and weigh things, but that was so long ago that no records have come down to us.

A famous Jewish writer of history named Josephus (Jo se' fus), who was born about four years after the death of Christ, wrote that Cain invented weights and measures. You remember that he was the son of Adam and Eve, who killed his brother Abel. Josephus may have been wrong, but surely the very oldest peoples had to weigh and measure things and they invented ways of doing this.

However, no system was satisfactory in these early days, and it was less than four hundred years ago that peoples and governments began to develop the standards we have to-day.

Long before the time of Christ the cubit was the unit of measurement of length in Western Asia and Egypt; it was declared to be the length of the average man's forearm, from the elbow to the end of the middle finger— about 18 to 20 inches. There is constant reference to the cubit in the Bible. The Greeks and Romans later brought the pace and foot into existence, the foot being one-third of a pace. When the Roman Empire fell and many small countries rose from its ruins the length of the foot varied

in each of them; it was in different places from less than 9 inches to over 16 inches in length.

Such conditions then survived for hundreds of years. Finally, about the year 1550 the Germans made a new measure for a foot, as follows:

"To find the length of a rood in the right and lawful way, and according to scientific usage, you shall do as follows: Stand at the door of a church on a Sunday and bid sixteen men to stop, tall ones and small ones, as they happen to pass out when the service is finished; then make them put their left feet one behind the other, and the length thus obtained shall be a right and lawful rood to measure and survey the land with, and the sixteenth part of it shall be a right and lawful foot."

In England Henry I, who was king from 1100 to 1135, declared the yard to be the distance from the end of his nose to the end of his thumb. His Parliament (the lawmaking body) established other standards of weights and measures according to grains of wheat or barley. Three barleycorns equalled 1 inch in length. The barleycorns used for measures were taken from the middle of the ear, dried and laid end to end.

Other measures of about the same period were as follows: the *fathom* (now 6 feet) was the length of the two arms outstretched, from tip to tip of the fingers; the finger, one-eighth of a yard; the yard, the distance around the average human body.

There was an early unit of weight in England called the *stone,* which was the same as 14 pounds by our measurements to-day. The hundred-weight was 112 lbs. (8 stone); the ton, 2,240 lbs. (160 stone); these correspond to our present *long* ton measures. The bushel was 56 lbs. (4 stone), and our present bushel varies from about 56 lbs. to about 60 lbs.

About the year 1250 the gallon was declared equal to 8 pounds of wine, and in 1452 as eight

pounds of wheat. An English law of 1689 made the gallon 231 cubic inches, and the United States yet uses this standard.

People found it easier to measure time, for did not the regular periods of day and night and the four seasons offer suggestions? In old Babylon the day began at sunrise; the Jews began it at sunset and the Romans and Egyptians at midnight. We in America to-day begin to measure the day also from midnight; one o'clock in the morning is the first hour of the day. At noon we reach twelve o'clock, and the next hour we call one o'clock in the afternoon. The French people, however, number the hours from midnight to midnight straight through from one o'clock to twenty-four o'clock; therefore what is one o'clock in the afternoon with us is thirteen o'clock with them, and our six o'clock in the afternoon is their eighteen o'clock.

The Indians of early America, if they wished to indicate three days to a white man would sweep an arm from east to west three times, to show three passages of the sun across their heavens. If they referred to "three moons" they meant the time covered by the coming of three new moons, and this was practically three months, for we have a new moon every twenty-eight days.

TROY, APOTHECARIES' AND AVOIRDUPOIS WEIGHTS. The *grain* is the smallest measure used in weighing anything. There are 7,000 grains in a pound of sugar or any other substance you buy at the grocery. There are 5,760 grains in a pound of drugs or in a pound of any precious metal, such as gold or silver. The difference noted is not in the weight of the grain in these instances; the grain as a unit of weight never varies; in druggists' weights and in jewelers' weights there are only 12 ounces to the pound, while in the grocers' weights there are 16 ounces to the pound, hence the difference in the number of grains to the

pound. The druggists' table of weights is called *apothecaries',* a word which means a compounder of medicines. The jeweler and goldsmith use *troy* weight, a word derived from Troyes, a town in France that was very important as a business center six hundred years ago. The grocers' table is called *avoirdupois;* the name means *goods of weight,* by which we may properly conclude that by this table all heavy and bulky goods are weighed.

THE METRIC SYSTEM. The most scientific system of weights and measures is that which is called the *metric* system (from the word *meter,* meaning *to measure*). The basis, or measuring unit of the system for long, or linear, measure is the *meter;* this is a unit which is fixed and unchangeable, for it is the distance from the equator to either pole divided by 10,000,000—one-ten-millionth of the distance from equator to pole. The actual length of the meter is 39.37 inches, or about 39⅜ inches; you will see that it is a little longer than our yard of 36 inches.

In metric tables the decimal system is used; that is, a unit of each denomination is 10 times as large as a unit of the next lower denomination. The table for linear measure which follows illustrates this:

10 millimeters (1/1000 of a meter) = 1 centimeter (1/100 of a meter)
10 centimeters (1/100 of a meter) = 1 decimeter (1/10 of a meter)
10 decimeters (1/10 of a meter) = 1 meter
10 meters = 1 dekameter
10 dekameters = 1 hektometer
10 hektometers = 1 kilometer

One kilometer is therefore equal to 1,000 times the length of a meter, and is therefore 3278.88 feet in length. By comparison it is close to ⅝ of our mile.

The unit of land measure is a *hectare,* which is almost 2½ of our *acres.* The *liter* is the liquid measure unit, and is a very little larger than our quart. In weighing articles the metric unit is the *gram,* which is about 35/100 of our ounce. A *kilogram* is 1,000 grains, and it is about 2 1/5 times as heavy as our pound.

You will be interested to know that the metric system, with its meters, liters, grams, etc., instead of yards, quarts, pounds, is in use in forty-three countries of the world. Great Britain and her colonies and the United States do not use it, but each may do so lawfully. If you would enter a business when you become men and women in which goods are sold in foreign countries a knowledge of the metric system would be necessary.

Lettering

When you see a man painting a huge sign you always stop to admire his work and wonder at the ease with which he forms the letters and words. You wish that you could paint letters as easily and as nicely as he does it.

Maybe the sign painter doesn't interest you as much as does the man or woman who can take a pen and India ink (solid black in color, without shine or gloss) and form letters as perfect as those you see in print.

Do not think that the gift of lettering comes to anyone without effort. Most expert people have had to study hard and practice a great deal in order to do good work, and what others have done, remember, you may be able to do, if you have patience and perseverance.

Another thing which may give you added courage: Watch a sign painter. He does not walk up to the signboard and begin immediately to paint the letters and words; he carefully blocks out with pencil or crayon every letter and every line, then takes his paint and fills in the proper spaces. Cannot you learn to do this? Are you willing to make a serious effort?

We will make an easy letter first—the capital H, in what we call a plain, square Gothic letter, without serifs. (That is a new word to you; a serif is a fine cross stroke which you see at the top and bottom of certain kinds of letters. You are to meet the word later in this lesson.) See how it should be blocked out, and how the same system of blocking can be used for various plain Gothic H's and K's.

The first is a *square* Gothic; the second a slightly *condensed;* the third a *condensed,* and the fourth an *extended* Gothic.

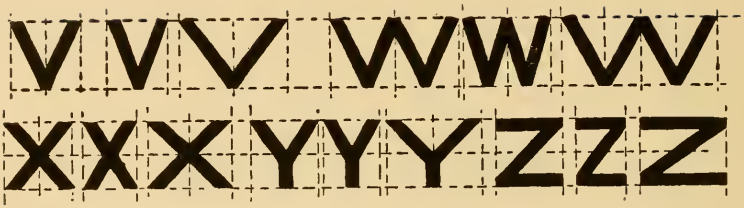
The greatest difficulty you have encountered in making these four letters has been in getting your guide lines perfectly straight. They should be made lightly with a pencil with soft lead, so all trace of them can be removed after you have filled the letters in with ink. Use ordinary ink for all your present practice work, or even a lead pencil will do; when you have made good advancement father will buy you some India ink.

Having practiced on H and K make four forms of the Gothic capital I, then L, E, F; they will be as easy as the H and K, and for them you need no patterns.

You will now wish to try to make some letters with oblique and curved lines. Practice on the oblique lines first. In the K note particularly how and where the oblique lines cross the penciled lines.

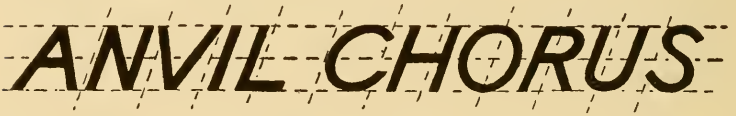
You see above letters from the extended to the condensed in form. Practice a great deal on these—until you can equal the skill of the young lady who drew all the forms you find in this lesson. (She was once as inexperienced as you.)

Next let us work on V, W, X, Y, Z. They present difficulties at first similar to those you experience with K, but you can master them. Make the letters all Gothic in style, square, condensed and extended.



You have practiced now on about half of the letters of the alphabet. M and N present no more difficulty than you found with those above.

Italics. To make italic letters easily it is only necessary to slope the penciled direction lines, as shown in the following forms:



Make all the Gothic letters—square, condensed and extended in italics.

USING SERIFS. Compare the two letters below, and note their difference.

The fine crosslines at the top and bottom of the second H are serifs; their only use is to add a little decoration to the letter. Therefore in forming this letter you take your first step in decoration.

Make all of the letters of the alphabet with serifs, so far as they can be used (there is no opportunity to place them on rounded parts of letters).

ADDING ORNAMENT. Have you been patient and painstaking in your effort thus far to produce good

work? If you have, you will enjoy greatly the ease with which you may become expert in making letters which are more ornamental—but surely not more useful.

A very practical style of letter is shown in capitals and small letters in the last two lines on the chart panel. In mastering this style, do not abandon the penciled squares; use them in this manner with all the letters:

By following the directions described above in detail any diligent boy or girl may become really proficient in lettering, even in making the very ornamental and highly fanciful designs. The chart panel gives full alphabets covering nine designs.

EXERCISE FOR CREDIT. Print on a card 4 by 6 inches the following sign, which you may consider a reduced *fac simile* of a large billboard display.

VOTE FOR
JOHN M. OLDBOY
FOR MAYOR
ON APRIL 5

Boy Scouts

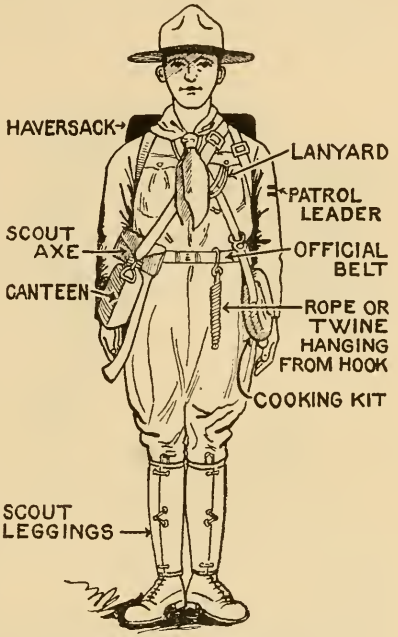
TO PARENTS. The Boy Scouts organization offers for boys just the sort of work and play which appeals to them at the ages of twelve to eighteen. It provides worth-while occupation, and so prevents their time being spent in undesirable ways. It places responsibility on the boys, and "responsibility is the maker of men."

It may be stated as a truth that boys will always organize unconsciously into "gangs." This is a psychological fact, and authorities are ever studying how to direct the "gang" activities into harmless and helpful channels. The "gang" impulse recognized and directed can be made a strong factor in the development into useful citizenship. The Boy Scout idea is the best outlet for boys' activities so far devised.

The tendency to hero worship causes the boy to imitate and follow the lead of someone; the Scout movement provides worthy ideals and examples. The desire to serve and sacrifice for a principle—the spirit of the age of chivalry and the Crusaders—is characteristic of adolescent boys. They want to do something for others, preferably for the universe. The opportunity to co-operate with forces for good to the improvement of the community and for the benefit of all gives scope to this disposition. This is the period when good leadership will aid the boy to become an ambitious, conscientious, useful member of society, while bad influences may drag him into a gang of hoodlums.

Love of outdoors, nature, wild animals, camping, hiking and primitive environment may be used to teach the wood lore and wood craft which is needed

for safety and which contributes to healthful, enjoyable recreation. Interest is sustained by continually offering something new and more advanced to learn and do.



A Boy Scout's Equipment

But parents cannot turn the formation of their boys' character over to the scoutmaster —nor to the teacher, the pastor, nor to all three together. Parents must study their child, his needs, his disposition and peculiarities, and plan to provide for him the environment, activities and influences he needs. Boys who "go right" will go right because they have been trained and led by parents who are willing to give time and thought and help to their needs. They go wrong because the parents do not take time to know and lead them. Fathers and mothers should be familiar with the Scout Masters' Handbook so they will know what their son is aiming at, and why. They should talk with the Scout Master, keep in touch with the aims, progress and achievements of the troop, and stand ready to help when called upon.

A Scout Troop can be no better than its Scout Master. See that a good Scout Master is chosen, then give him support and assistance. He must have a Troop Committee. Your interest in your boy should lead you as his father to volunteer on that committee.

The Scout movement was organized in England in 1907 by Lieutenant-General Sir Robert S. S. Baden-Powell. In February, 1910, the ritual and conditions were revised to suit American conditions, and the Boy Scouts of America was incorporated.

HUNTING WITH THE CAMERA BETTER THAN HUNTING TO KILL

Since that time the movement has spread all over the world, twenty-six countries having Scout organizations. Many noted men, including the writer of animal stories, Ernest Thompson Seton, who was chairman of the committee on permanent organization, have helped to work out the principles and practices. The first meeting of the national council was held at the White House in Washington, and was addressed by William Howard Taft, who was then President, and who agreed to become Honorary President of the organization. Col. Theodore Roosevelt was Honorary Vice-President, and later was First Scout Citizen.

The national headquarters are at 200 Fifth Avenue, New York City. Make application there for information on how to proceed to organize a troop in your community.

WHAT IT MEANS TO BE A BOY SCOUT

The Scout badge stands for trustworthiness, courtesy, honor, thoughtfulness and clean living. The work promotes character and good citizenship.

It is every boy's business to keep himself healthy and strong, to keep himself clean, and to get an education. If all the boys of the community are trying to do the same thing, they can be of great help to one another.

Legally, a boy becomes a man on the day he is twenty-one. He goes to bed one evening as a boy; he wakes up the next morning a man.

There is never any doubt about the kind of man a boy will be. Anyone can tell. He will be just the kind of man that he was boy. There is no magic which can change him overnight.

We grow to be like the ideals we set our minds on and work towards. It is never too early to begin planning and studying and working for what we hope to achieve.

It is a good idea to think over the names of men you know, to decide which one you want to be like, and then to train and educate yourself to be that kind of man.

If you want to be like the village ne'er-do-well just shirk and loaf and always be just too late and never assume any responsibility. But if you expect to be a man to whom the community will look for leadership, to whom men will come for information, good judgments, decisions as to the right and wrong, begin training now.

He is Taught Good Manners

You cannot begin too early to develop some learning along lines which interest you. It takes a long time to become proficient in anything that is worth while. To be a photographer requires much learning about color, lights, shadows, time, distance and

artistic effects. To be a farmer, begin now to learn about and work with stock and grains, legumes and grasses, soils, and cultivation, farm management and marketing, and how good roads, waterways, railway rates and the Board of Trade affect your future business.

Boy Scout work will give you some of the information and help you get in touch with other sources of practical knowledge.

He is Dependable

Any boy over twelve years of age who likes to hike, track, swim or camp, is interested in wild life—plants, trees, animals, wood lore—first aid or signaling, or who would like to learn more about any of these things, gain general information and fit himself to be of service to others, may become a member of a scout troop.

If there is none near you, ask your father and the other boys' fathers to help you organize one. Get a Boy Scout Handbook and learn what to do.

Scout Requirements. There are three ranks, named Tenderfoot, Second Class Scout and First Class Scout.

A Tenderfoot is a Scout on probation. He promises on his honor to observe the following regulations:

1. Do his duty to God and country, and obey the Scout Law. Help others at all times. (Do a daily good turn.)

Keep himself physically strong, mentally awake and morally straight. (He cannot help others unless he is.)

2. He must know the composition and history of

the national flag and the customary forms of respect due to it.

3. He must be able to tie four knots selected from a list of ten.

If a Tenderfoot studies and works, at the end of a month he may pass the tests and qualify as a Second Class Scout.

The Second Class Scout cultivates habits of observation, resourcefulness, thrift and ability to adapt himself to conditions. The requirements are:

1. A month's service, to establish habits.
2. Knowledge of First Aid and Bandaging.
3. Knowledge of Signaling.
4. Tracking a half-mile in twenty-five minutes, following a trail laid out and indicated by pieces of paper or a similar device. This is to train in the habit of observation. In town observing four windows for a minute each, and telling the contents of one, may be substituted for this test.
5. Travel one mile in twelve minutes at scout's pace—fifty steps running alternated with fifty steps walking. This pace may be kept up for a long time without tiring, and once accurately attained serves as a measure of both time and distance.
6. Use of knife and hatchet. (Whittle away from you, not toward you. Don't try to whittle wood with nails in it. Don't carry an open knife in your hand, etc.)
7. Firemaking without paper and with only two matches.

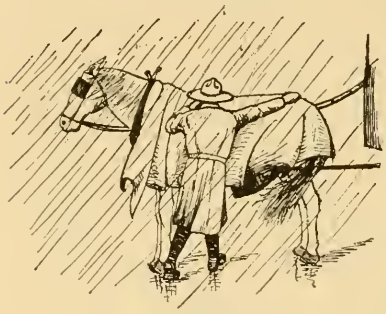
He is Kind to the Aged

8. Cook without ordinary kitchen utensils two of a list of dishes.

9. Earn and bank $1.00. (Cultivate the habit of thrift.)

10. Be able to box the sixteen principal points of the compass.

A First Class Scout acquires a sense of community obligations, learns to coöperate with others for the public welfare and to render public service. In brief, he assumes his place as one of the citizens of the community. The first requirement of leadership is the ability to coöperate with others — as someone has said, to "so conduct yourself that others can work with you." Every scout should aim to be a leader and to lead in the right direction.



He is Humane

A First Class Scout must do advanced work in some of the lines taken up as a Second Class Scout, besides becoming proficient in additional acquirements. He must furnish evidence that he has put into practice the principles of the Scout oath and law—is trustworthy, loyal, helpful, friendly, courteous, kind, obedient, cheerful, thrifty, brave, clean and reverent. He must train and enlist a boy as a Tenderfoot, thus passing along the good he has gained from his Scout membership.

First Class Scouts may win merit badges for advanced work in the various crafts; five merit badges entitle him to a Life Scout badge, ten to the Star Scout badge; twenty-one merit badges, which include such essential ones as First aid, life saving and personal health, give him the rank of an Eagle Scout.

As the First Class Scout becomes more advanced and more acquainted with the meaning and benefits of the work, he may become Assistant Scout Master and finally a Scout Master, helping to train other boys in the principles and practice of Scout law, which means helping them to Be Prepared (the Scout motto) for whatever emergencies may arise.

Scout craft includes such commonplace but necessary things as knowing how to resuscitate people who are unconscious as the result of being nearly drowned; how to avoid accidents; how to cook a simple meal; how to care for his personal health; how to play; how to help in whatever the community needs to have done.

Boy Scouts can always be depended on to help put over any good movement—getting rid of flies; taking subscriptions for the library; assisting the police when there are circus-day or fair-day crowds; directing strangers, or whatever needs doing. During the World War Boy Scouts were ushers at patriotic meetings, they paraded, and they sold many million dollars' worth of Liberty Bonds. It was the help he received from a Boy Scout in England which led W. D. Boyce to bring the movement to the attention of leading men of this country and resulted in the incorporation of the national organization.

The knots which the Scout ties remind him to do a daily good turn; the badge with its three points suggests the three promises of the Scout oath; the motto (Be Prepared) keeps him ever on the alert to make himself more efficient, more observing, more dependable. The Scout Law expressed in five words is: Honesty, Courage, Kindliness, Loyalty, Service—good guideposts for anyone.

Camp Fire Girls

To Parents. Because Camp Fire Girls have ceremonial costumes, and honors represented by beads, mothers and fathers should not think that "it is all play-acting." Even if it were, grown men and women wear expensive and sometimes almost ridiculous costumes, and take part in ceremonies at initiations and parties, which to many people appear foolish. If "play-acting" interests grown people, think how much more it appeals to young people.

However, there is a worth-while meaning to all the Camp Fire symbols which helps to impress the truths taught and at the same time provides relaxation and contributes to a happy outlook upon life. "Camp Fire Girls," says their manual, "is an organized effort to find romance, beauty and adventure in everyday life. It seeks to make the homely task contribute to the joy of everyday living. It aims to aid in the forming of health habits, cultivate the out-of-door spirit, create standards of women's work, and give girls an opportunity to learn team-work by working together—to give status and social recognition to mothers' knowledge and achievements, foster the intimate relationship of mother and daughter and develop a sympathetic understanding of economic relationships."

The Home Craft, Nature Lore, and Business Training give daughters the education mothers have been too busy to give at home, and which we have not yet learned to include in the education given at school. This training is a liberal education in general knowledge, common sense and common things. It takes the drudgery out of household tasks and

makes the work of home-keeping dignified, glorified, systematized and significant.

Take time to read over the outline of the work and the meaning of the organization. Notice the things there are to learn, and how the applicant must qualify for the different ranks, and you will agree that the girls have a right to be proud when they have attained honors. If you do not know what the organization stands for and what the honors signify, you cannot intelligently recognize the achievement nor share their pride in what they have accomplished.

You can help institute a Camp Fire in your community. Perhaps you can serve as Guardian of the Fire. Mothers make the best of Guardians, if they enter into the spirit of the work.

A Guardian does not need to know everything about the Camp Fire program. If she is not an expert in photography or cannot swim or do carpentry, she can get those who do these things to give that instruction. The Guardian's pin means that the wearer is dependable, has standing in the community, that she works for and loves girls. She stands guard. Write to the National Headquarters, Camp Fire Girls, New York City, and ask for instruction for organizing a Camp Fire in your community.

Things Camp Fire Girls Learn to Do and Be

The Camp Fire Girls is an organization of girls who want to make life just as splendid as possible; it is an army of girls who do things. It aims to develop the home spirit and extend it to the entire community; to help people realize that mothers' knowledge and mothers' work are as important, as worthwhile, and may be made as dignified, as interesting, and as instructive as the work in an office or a schoolroom—that home-keeping is the biggest business there is in the world. It aims to make beautiful,

purposeful service of what has seemed drudgery, to promote happy social life and provide wholesome, interesting recreation.

There is unhappiness, suffering, loneliness everywhere. The women of the community must take the lead in changing this. You cannot help unless

AROUND THE CAMP FIRE

you know how. You must be educated and trained to give service—nobody can do anything worth while without training. Camp Fire craft work provides the broadest kind of education for body, mind and heart. It helps girls to become efficient, happy home-makers and useful, dependable citizens.

The Camp Fire Girls' organization was perfected in 1912 to provide for girl leadership and instruction, in just the same way as the Boy Scout movement is intended for boys. Hon. Woodrow Wilson was at one time Honorary President, and Chief Justice and former President William Howard Taft was Honorary Vice-President. Miss Jane Addams, Judge Ben Lindsay, and Dr. and Mrs. Luther Gulick are among the people who have helped establish the work.

The law of the Camp Fire is to "Seek Beauty, Give Service, Pursue Knowledge, Be Trustworthy, Hold On to Health, Glorify Work, Be Happy."

People are not trustworthy by accident. It takes thinking, resolution and *steady habit.* You cannot grow in a minute into the kind of woman you want to be. You must begin now and establish habits. More people succeed because they are splendidly healthy—have reserve power, can stand work others cannot stand—than for any other reason. No one can be a leader who does not have so much physical energy that her spirits are bubbling over. Health means correct *habits* of diet, exercise and thinking, sound sleep, and enough of it, and joy in living. Beauty means cleanliness, health, correct posture, kindly manners, a pleasing voice, well-cared-for skin, teeth, hands and hair. Worth-while qualities do not come by accident, nor are they acquired over night. They are established by preparation, attention and habit. You can make the desire for things which are good and healthful become a part of yourself.

The organization of Camp Fire Girls helps you to know what things are worth while; it teaches you what you need to know about those subjects, and the doing of the things called for establishes habit which crystallizes into character.

There must be not fewer than six nor more than twenty girls to a Camp Fire; ten to fourteen is the best number. A Camp Fire girl must have passed her twelfth birthday. Girls between the ages of six and twelve may become Blue Birds. Each Camp Fire should have at least one Nest of Blue Birds to look after and train. Each Camp Fire is in charge of a Guardian of the Fire, who may be the mother of some of the girls, or any dependable woman over eighteen who has the mother instinct and can lead girls.

The three ranks are Wood Gatherer, Fire Maker,

Torch Bearer. You may see the symbol of each rank on the chart panel. The badges are a silver fagot ring for Wood Gatherers; a bracelet, suitably engraved, for the Fire Makers, and a pin on which are the sun and a pine tree, for the Torch Bearers. The sun is the general symbol of fire, and the pine tree signifies simplicity and strength.

On Duty

Attainments are recognized by honors symbolized by colored beads. The required honors for becoming a Fire Maker are indicated by purple beads. Elective honors are represented by different colored beads: Home Craft, flame color, because fire is the center of a home; Health Craft, red, for blood; Camp Craft, brown, for woods; Hand Craft, green, for growing things; Nature Lore, blue, for sky; Business, yellow, for gold; Patriotism, red, white and blue. Do you see how much good fun there is in it, besides all the things you can learn?

A Wood Gatherer who works may become a Fire Maker at the end of a year. Fire Makers may become Torch Bearers when they have the required honors. These honors include, among other things, helping to buy, cook and serve a Camp Fire meal and care for the fire; mending a pair of stockings; keeping her personal account for a month; sleeping with open windows; taking a half-hour's daily outdoor exercise each day for a month; knowing the causes of infant mortality in the summer, and how it has been reduced; knowing what to do in such emergencies as clothing on fire, fainting, an open cut;

suitable dress for cold or wet weather, and for tramping; preventives of constipation; the story of some woman who has done something for the country or state.

The symbol of the organization is fire, because homes were first built around fires; the salutation is the hand sign for fire, and is made by flattening the fingers of the right hand across the fingers of the left hand, to indicate crossed logs, then raising the right hand, following the curves of a flame until the index finger points straight up.

The watchword, *Wo-he-lo,* with the accent on the second syllable, is made from the first two letters of the words Work, Health and Love.

Torch Bearers, as their name indicates, should carry the knowledge they have to others. A Torch Bearer should be a leader, or should show special skill in some craft. She is an assistant to the Guardian, and so must be trustworthy, happy, unselfish, a good leader and a good team-worker.

There are so many interesting things to do that we cannot tell you half of them; but just to give you an idea, a few are mentioned: Canning and preserving; making butter; removing stains; invalid cookery; care for baby; cook Sunday dinner and let mother rest; sing, play, recite; identify trees, flowers, ferns, mosses, apples, birds, trees; raise a crop; care of colds; help organize and carry out an appropriate celebration for a national holiday; know family history; learn about boards of health, ventilation and sanitation of factories; take a position and hold it successfully for four months; be on time. Are these worth knowing and doing?

A Dependable Care-Taker

There are so many beautiful things connected with the lore of Camp Fire we cannot tell you all of them, but here are a few:

The Wood Gatherer's Desire

As fagots are brought from the forest,
Firmly held by the sinews which bind them,
I will cleave to my Camp Fire Sisters
Wherever, whenever, I find them.

I will strive to grow strong like the pine tree,
To be pure in my deepest desire;
To be true to the truth that is in me,
And follow the Law of the Fire.

The Fire Maker's Desire

As fuel is brought to the fire
So I purpose to bring
My strength
My ambition
My heart's desire
My joy
And my sorrow
To the fire
Of humankind.
For I will tend
As my fathers have tended
And my father's fathers
Since time began
The fire that is called
The love of man for man
The love of man for God.

—*John Collier.*

The Torch Bearer's Desire

That light which has
Been given to me
I desire to pass
Undimmed to others.

"We glorify work because through work we are free. We work for the joy of working."

"We hold on to health because through health we serve and are happy."

"We love love, for love is life and light and joy and sweetness, comradeship, motherhood, fatherhood, and all dear kinship."

Would you like a Camp Fire in your neighborhood? Do you think mother and the other girls' mothers can be induced to help arrange for one?

Kites

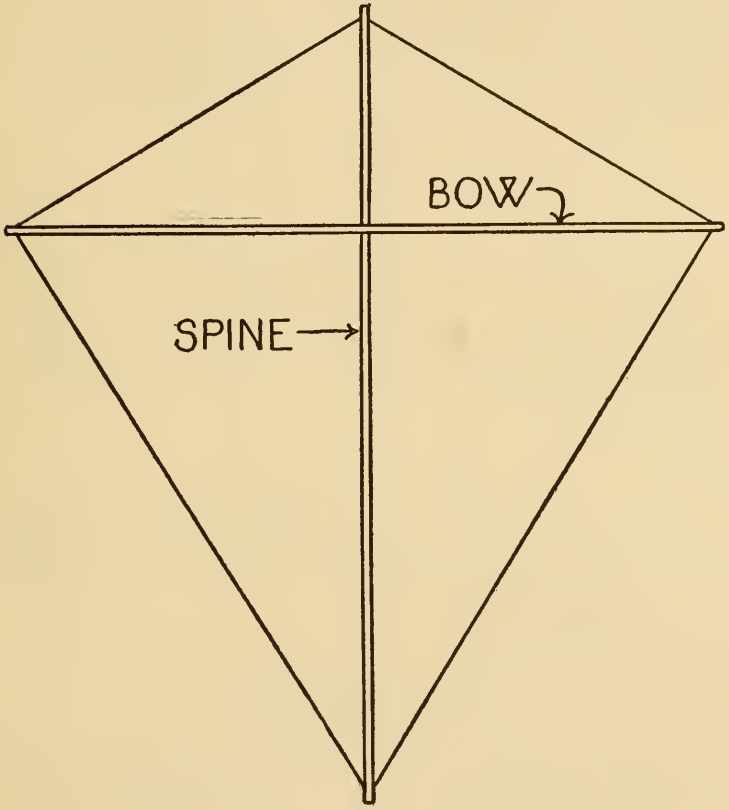
Kite flying in the springtime! This is one of the jolliest and most interesting sports we can enjoy out of doors. It is real fun to feel the tug of the kite far up in the air, to know that we can haul it in, or give it more string and let it fly higher, and to watch it swaying under the blue sky like a captive bird.

Boys and girls in many different parts of the world have been flying kites for hundreds of years. To-day, brown-skinned boys on the other side of the world are having the same good times as their white brothers, making and flying kites. In fact, kite-flying is more common in Japan, China and other countries of Asia than in our own. One good reason for this is that the bamboo plant, which grows in these countries, provides a light, strong wood that is easily bent but not easily broken, and is the best wood in the world for the frame of a soaring kite.

There are several stories to explain the invention of the kite; it is hard to tell who thought of it first, when we remember that even savage tribes were flying kites centuries ago. The people of Korea have one of the most interesting stories about it. They say that the first kite was made and sent up into the air by one of their generals, who wished to encourage his soldiers just before a battle. This general fastened a lantern to the kite, and when the soldiers saw the bright light in the sky they thought a new star had been placed in the heavens as a sign of divine help for their cause. This is a pretty story; suppose we make believe that it is true, anyway.

In China they have special kite days, when men and boys by the thousands make for the hillsides to enjoy themselves. Some of their kites are so big

that they will lift men off their feet into the air. Humming kites, having round holes provided with vibrating cords, are very popular. In some parts of Eastern Asia kite-fighting is a common outdoor sport. The strings are rubbed with a mixture of glue and crushed glass to make them stiff. The owner of one kite will try to get it on the windward side of another,



Common Form of Kite

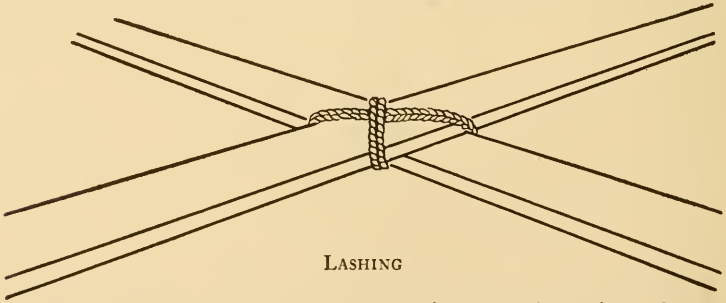
then let it drift against the second kite and with a sudden jerk cut the string in two. It takes a good deal of skill to cut down a kite or to keep one's own kite safe.

USEFUL KITES. We must not forget, however, that kites are more than playthings. Our Weather Bureau Service uses kites to learn about conditions in the air, such as temperature and amount of moisture. Small instruments that record these facts are fastened to wires, which are lifted far up into the air by teams of kites flying tandem. Kites have also been used to take photographs from the air, to show signals on the battlefield, and in wireless telegraphy. We might have heard more about them in the great World War if it had not been for the wonderful record of the aeroplanes.

Benjamin Franklin was the first man in our own country to use a kite to aid science. In the year 1752 he sent up a kite during a thunderstorm, and by means of a wire running down from the kite along the string, he proved that lightning is electricity. Scientists tell us that Franklin might easily have been killed by lightning when he tried this experiment. To-day, men who work with kites know how to protect themselves.

KITE MAKING

THE COMMON KITE. The simplest form of kite and the one seen most often is the plain surface kite whose framework consists of two sticks of different

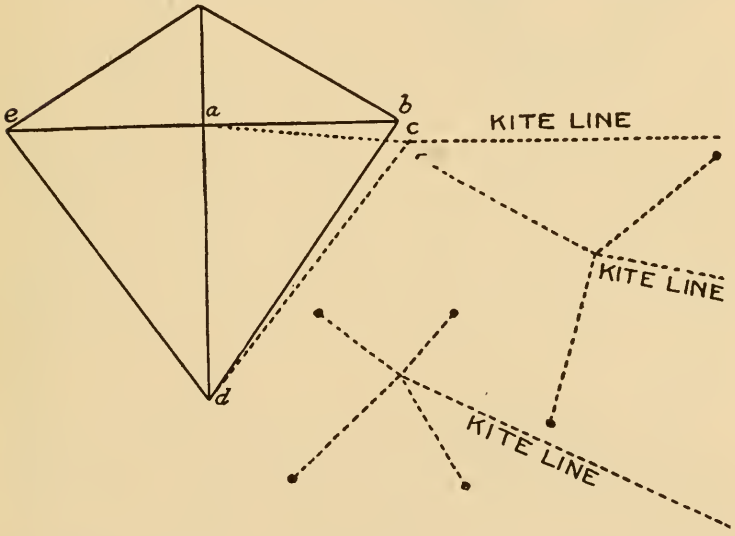


LASHING

lengths, placed one upon the other so that they form a cross. When the sticks are fastened together with a cord, as here shown, they are said to be *lashed*.

We must be careful to have the two opposite sides of the framework equal, because otherwise our kite will jerk to one side, or perhaps come down suddenly to the ground, or maybe not go up at all. To find the center of each stick by measuring with a piece of string is an easy matter. The two ends of each stick should also be the same in weight, and if after balancing the sticks over a knife blade you find that the ends vary, carefully whittle down the parts that are too thick. You will find that soft, tough woods, like spruce and basswood, are best to work with.

STRINGING AND COVERING. These are very im-



portant steps in kite-making. The string goes all around the ends of the framework, providing a support for the covering. Use strong cord that will not break easily. Cut notches in the ends of the sticks, and then stretch the cord through these slits, fastening it at the top of the spine. To cover the frame, paste light-weight paper over it, turning the edges neatly down over the cord. Stout tissue paper in

bright colors makes a very pretty kite, but plain wrapping paper or even newspaper will do very nicely if nothing else is at hand.

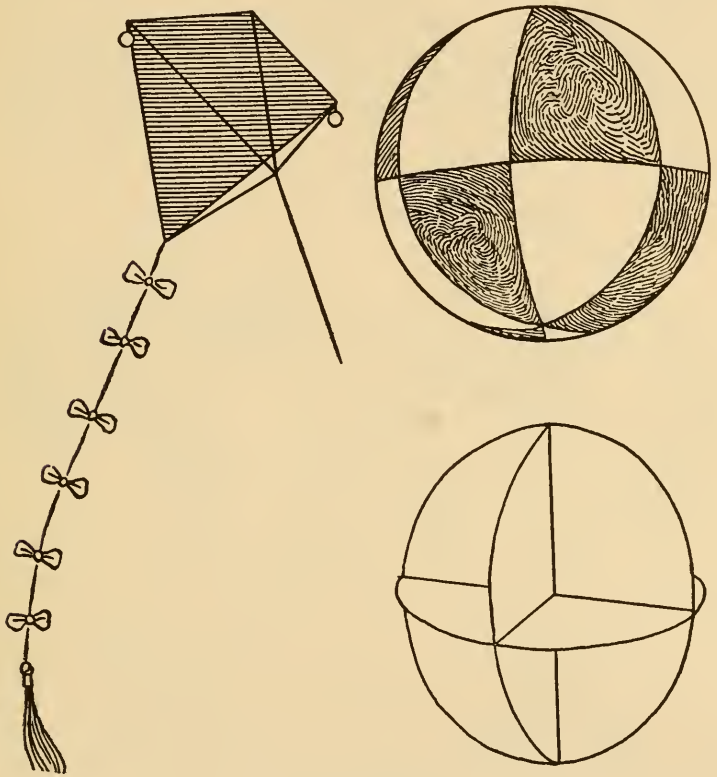
MAKING THE BRIDLE. Most kites need a *bridle* to fly at the right slant and with proper poise. Bridles are rather loose strings fastened to the framework. Where the strings cross the kite line is attached. Different kinds of bridles are here shown. The diagram with the letters *a, b, c, d, e* shows a bridle fastened at the bottom of the spine *(d)* and the place where the bow and spine cross *(a)*. The kite line is attached at the point *c,* and the length from *a* to *b* is the same as the distance from *a* to *c*. Also, *bd* and *cd* are equal. If we should pull the bridle over to the left, *c* would just touch *e*. The upper of the other two diagrams shows a three-string bridle, and the lower one shows a four-string bridle.

LINES AND TAILS. The line of our play kite needs to be only good cotton string, the harder twisted the better. For stronger pulling kites some people like twisted linen twine, shoemaker's thread or cord. It must be light and strong; scientists have found that for their working kites, piano wire is the best. They use reels for such lines, and so can ingenious boys.

The weight of its tail will keep the kite in position and at the right angle to the wind. We also like to see a tail trailing gracefully behind. It should be from ten to fifteen times the length of the kite, and should be made of a cord, on which strips of paper or cloth are tied at intervals. A heavier bunch hangs at the end. For extra beauty we might use colored paper balls or some made of three intersecting cardboard discs, or we might use light ropes with tassels, as do the Japanese boys, our Christmas stock of paper, rope and tinsel coming in handy.

TAILLESS KITES. But if we are up to date, we must know how to make tailless kites. These are

always regular in form, with the bow bent backward, and the covering baggy. The tailless "Eddy" has a spine and bow, in form of a cross just like the first kite described; but the bow is bent backward

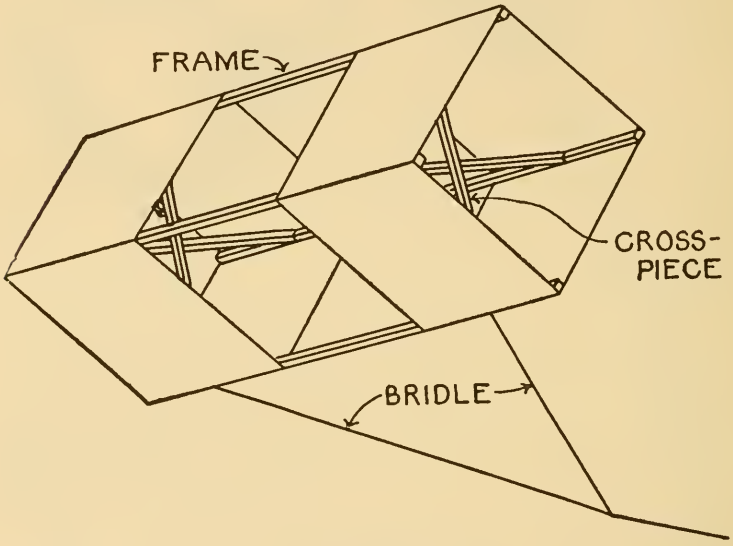


Kite Tails

by means of a brace stick (about three inches long in a three-foot kite) inserted between the middle of the bow, and a string stretched between the ends. When the covering is put on, we cut it 1½ inches larger around than the frame, and fold in only ½ inch. That will make the necessary bagginess. We can have other shapes by using several spines and

bows. The star kite or shield can be tailless, if it has a bowed front to face the wind, and a baggy covering. The bridle is attached at top and bottom of the spine or at the bottom and crossing of spine and bow.

BOX KITE. Another very modern tailless kite is the box kite, which is a little harder to make. It looks like two square boxes with no bottoms or tops, set one on top of the other, with sticks to keep them

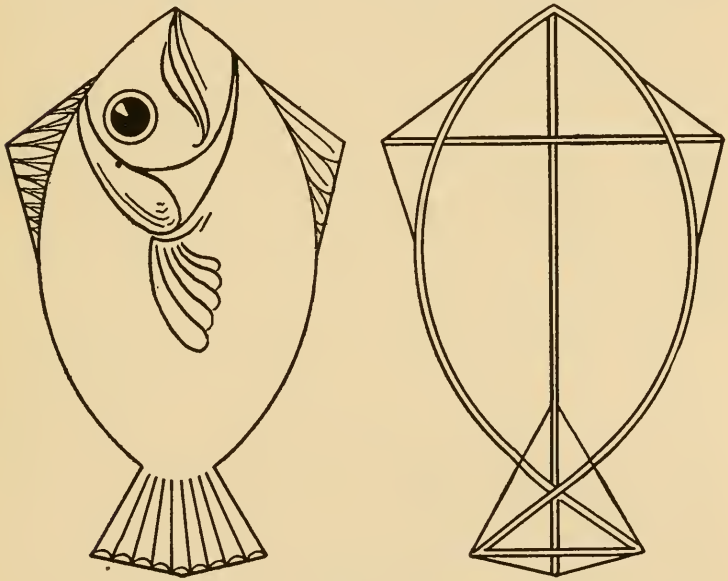


BOX KITE

the right distance apart. We need four sticks of equal length, four shorter sticks for braces, two stout cloth strips and glue. We glue or stitch half-inch hems on each band and join the ends to make two separate cloth "belts." We glue the bands to the sticks as shown, making the box shapes. Then we notch the cross-pieces to fit into the frame sticks inside the boxes, glue and lash them tight. The cross pieces must be long enough to brace the sides firmly. The bridle and line are attached as shown in the

drawing. Now we can go out and fly our little aeroplane.

FANCIFUL KITES. The box kites are the best and most useful of the designs that are unusual. They have many more complicated forms, but they are entirely practical. Some of the boys may be more interested, perhaps, in the fanciful and amusing kites, which must have tails for balance. We can make them brilliant in color and varied in form with tissue paper and paints, with windmills and movable



FISH KITE

cardboard attachments—to say nothing of tails! We always have our stick framework, of course, but we must also have split bamboo for the curved outlines. The bamboo can be bent to shape easily, if heated or if wet, and then dried in the shape wanted. The joinings must be firmly lashed. String will make the softer outlines, as in the sails of the ship kite or the points of the star.

Suppose we try the butterfly or the fish kite. The fish kite has its bow and spine in the regular position, only we lay it on its side. The fish's body is made with bamboo, its tail and fins with string; the eyes, mouth, etc., we shall have to paint. The butterfly is a little more complicated. We make each side separately, then lash the two together, as shown. We have four sticks, you note, for the framework, and bamboo for the curves. Two broom straws, crossed, make the head and "feelers." Here's a good opportunity to use our paints in an artistic way.

The star and shield kites are tail kites, too, and are easily made. We might have some very fanciful loops of small stars dangling from the three lower points of the star kite to make the tail. Then cardboard attachments are interesting, too, like the clapper in the bell kite and the hull of the ship kite. If we want these movable, we attach them with a loop of string. Some boys make the legs of their men and women kites of cardboard, and attach them so they do acrobatic stunts in the air.

Now we shall have to try the boy or the girl kite, even if we know they are going to be difficult to balance accurately around the spine. Suppose we try the boy first, as he has straighter lines. We will make him four feet high. Then we need four sticks of the following lengths: two each 3 ft. 9 in., for legs and body; one 2 ft. 6 in. for the spine; one 3 ft. 5 in., for arms. Smaller dimensions, kept proportionate in length, may be used, if desirable.

We shall cross the leg and body sticks, as shown, with the spine exactly in the middle. We attach the arm stick at its center point to the spine. The head we make of bamboo, also the feet and hands. The spine must halve the head exactly. When these extremities are lashed on firmly, we fasten small cross sticks to the ends of the arm and leg sticks for sleeve and trouser supports. Then we outline the body

and neck with one string, the arms with another, and the trousers with a third.

Now we are ready to paste our tissue paper together, one color for the face and hands, another for the trousers, a third for the coat, and black for the feet. We place the framework on our paper patch work, cut around the frame, leaving ½ inch for turning over the edge. We snip the edge at intervals around the curved outlines, paste a section at a time, and fit it smoothly over the frame. Then we use our paint brush for face, buttons, ties, etc., and the frame for our boy kite is done. The bridle we attach from left foot to right shoulder and from right foot to left shoulder, the line being attached at the crossing. The tail band hangs from a loose string connecting the two leg ends. We shall try a girl kite next, remembering to have plenty of bamboo and paint for her decoration. Then we can try all sorts of men and women, some with dangling feet, too.

Now, having learned how to make many kinds of kites, we can have a tournament, and put a dozen into the air at once!

Plan of My House

No doubt you have made houses out of building blocks, sand forts on the beach, and tents or play-houses in your back yard. It was a great deal of fun, too, and you liked to pretend you were living in those places. You have been doing just what your ancestors did thousands of years ago—building houses of the stuff that was handiest and in the simplest possible fashion. That is what the Eskimo still do when they make their snow-brick homes that look like bowls, upside down. Your ancestors went ahead with no particular plan, building their shelters in the simplest way, as was easiest.

But nowadays we are much more particular about the houses we are going to live in. We aren't satisfied with a one-room house in the middle of which is an open fire, with the smoke going out of a hole in the roof. Of course it isn't so many years ago that such log huts were built in this country, and pioneers had to be satisfied with them. There are still very crude shacks built in some parts of the country, where there are very few people.

But pride in beautiful homes began a long, long time before Christ, in such countries as Egypt, Greece and Rome. We know that, for we can dig down under heaps of earth in those countries and find wonderful houses, planned very carefully and furnished very magnificently. We still like to construct the Greek or Roman type of building, with its simple lines and beautiful pillars; most of our public buildings in Washington, our national capital, are in the Greek and Roman style. Then think of the picturesque old castles and chateaus in Europe, some of them almost a thousand years old. They are not

at all comfortable or convenient, as we want houses nowadays, but they are very charming, with their towers, carvings and decorations. They, too, have taught us much about building.

It is no wonder, then, that with all this experience behind us, we are more than ever interested to-day in making our homes beautiful. But we modern people are even more interested in making our homes comfortable and healthful, for we know how important that is for the happiness of everyone. We want houses that can be heated evenly by a furnace, hot water or steam plant in the basement, a bathroom, supplying hot and cold water for the daily bath, a great many windows admitting sunshine and fresh air, a good system of lights, furnishing the soft glow that prevents eye-strain, numerous closets where clothes, linens and playthings may be kept in order, a pantry that will be cool and fresh, an icebox that can be filled from the outside, a cellar that is clean and airy, and a yard where boys and girls can play comfortably.

You see there is much to think about—so much that most houses nowadays are planned by skilled men called architects, who have a taste for drawing and an education which has trained them in everything connected with the building of homes. When someone wants a satisfactory home he goes to such a man and asks him to show him pictures and plans of houses from which he may choose. Often he asks the architect to change a plan to suit him, or to make an entirely new one. Then the contractor takes over the plan, hires the bricklayers, carpenters and plasterers, and in a few months the house is completed. The man and his wife and children still have to make it into a home; you tell us how they do that.

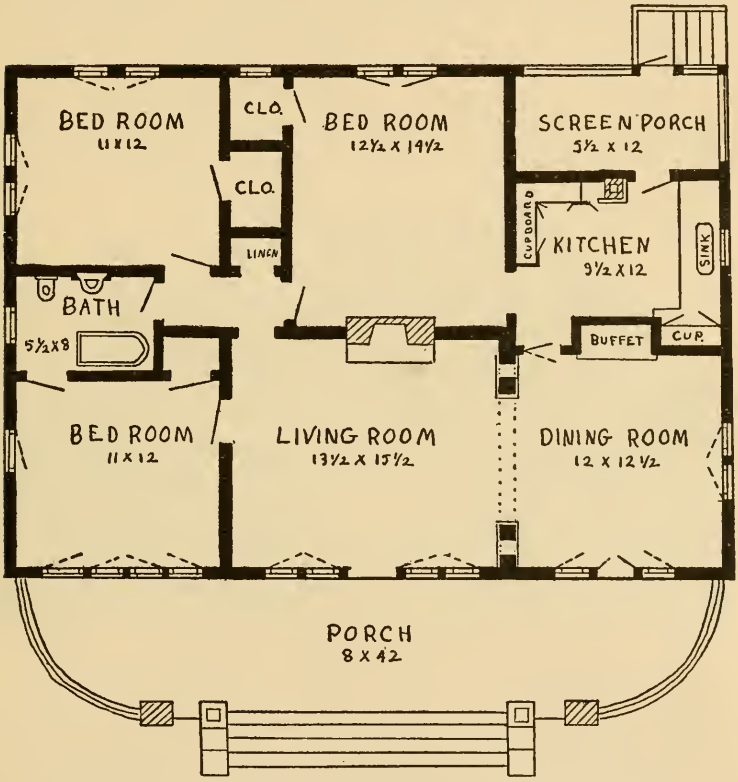
Sometimes clever persons who love home building very much just learn a few things from architects' drawings, then go ahead and make their own plans.

That is much more interesting, and that is what we suggest you do. You can learn from the chart much that is necessary for making a plan. Study it carefully. The architect first decided upon the style and material of the house, the size of the lot and the size of the house that would look well on it. This architect decided on a stucco bungalow with a pillared porch, of a size suitable for a fifty-foot lot. Then he settled on the number of rooms and their arrangement, the porches, bay windows, gables, etc. By that time he was able to make you both the picture and the plan, the latter being an outline drawing of the floor space of the house, taken from above, with the roof removed.

Before drawing the plan he decided on his scale for measuring; that is, how many feet an inch of line in his drawing was to represent. Note that the bungalow in the chart is about thirty by fifty feet, counting the porches, but not the front and back stairs; it contains five rooms and two porches, a staircase from the living room to the attic, a bathroom, a pantry, a hall, lots of closets, a fireplace and numerous cupboards and fixtures. The outer walls are shown by a heavy black line, interrupted by spaces which mean windows; the inner walls are shown by a finer line. The doors are represented by lines and arcs showing which way they swing; all the fixtures are outlined. When the architect sketched the outside of the house, he suggested even something of trees and shrubbery for a background, for a pretty house must have an attractive setting.

Now you are the architect, and you are going to plan the house you'd like to live in. What style shall it be, a bungalow or two-story house? Suppose you start simply with a small house something like the one in the chart. It would be well, first, to make a drawing of the floor plan of the house on the chart panel, for practice. You might then try a small

bungalow with a kitchen at the back and the two bedrooms connected with the bath. You might add a screened porch; one that goes around the side of the house would be attractive. Then you might try a two-story house, with all the bedrooms upstairs,



CAN YOU GIVE ONE REASON WHY THIS PLAN IS NOT THE MOST ECONOMICAL?

and make a plan for each floor. It would be interesting, too, to work out the basement, with the furnace room, coal bins, fruit cellar, laundry and perhaps a playroom for small boys and girls. Just one suggestion: you can save much money on plumbing if you see to it, as the plan on the panel does, that

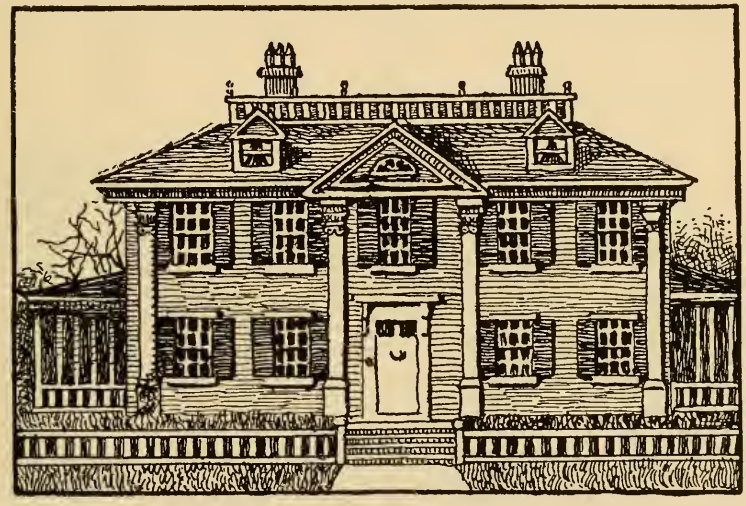
the kitchen and bathroom fixtures come where they can use the same main pipes for water. If you plan a two-story house, see that your bathroom pipes connect with the kitchen pipes just below. Make floor plans of such houses as you would like to live in, being careful to draw them to scale. A good scale is four feet to one inch, or eight feet to one inch, if you prefer.

There are all sorts of beautiful two-story houses, but until you get more ideas about styles you might cut out of magazines the pictures of pretty houses and then see if you can plan their interiors. Then later on you can pretend you are rich, and plan houses with a number of extra rooms, such as a library and a den downstairs, a sewing room, a nursery or a playroom upstairs, and possibly servants' rooms with baths on the third floor. You can also plan for a tennis court, a rose garden, a swimming pool, etc., on your grounds. It is great fun to give your imagination a chance to build these wonderful "castles in Spain."

Suppose now you finally have a plan that suits you perfectly and makes you really wish your father could build such a house. You can build only a model to be sure, but that is very interesting. Use cardboard, or better still, beaver board. Let one inch represent a foot, and make your house to scale. Construct the four outer walls, cutting the windows the right size and covering them on the inside with oiled paper, which looks just like glass. Fit the walls together, add your chimney on the outside of the wall containing your fireplace, and attach your porch. You can make your stairs out of heavy paper, if not of cardboard.

The roof must be constructed to fit, but left removable so that you can get at the inside of the house. Now you can put in your partitions, with the doors cut out and hinged with paper. If you are patient

you can put in most of the fixtures. Then paste your house on a board representing the lot and think about your grounds. Pieces of dried weeds will make fine trees; pieces of sponge, colored green, make good bushes; and moss makes natural looking grass. You can even have a pool in your garden by using a piece of mirror and surrounding it with moss. It would then be a simple matter to paint your house, trim-



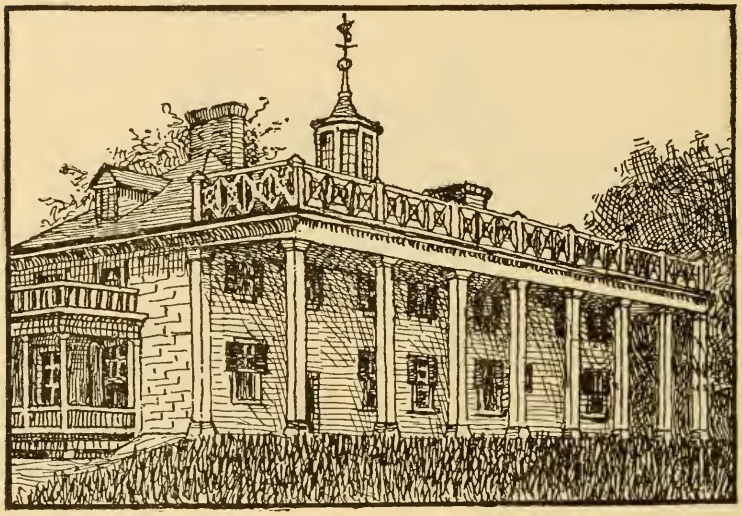
New England Colonial Type

ming the window frames, doors and porches as you think pretty.

If you should be interested in furnishing your house, you must think up a color scheme for each room, remembering that plain walls and a plain carpet make a good background for gayly-colored furniture. Your mother's scrap bag will provide the carpets, curtains and covers for the furniture. The furniture itself you can make out of berry-box wood or beaver board. As you go on perhaps you can add

a good many things to your house, such as a garage, an arbor, flower beds, etc.

After you've tried making a simple house, you may get interested in the various kinds of houses popular in different sections of the United States. Perhaps the New England colonial type will appeal to you, the kind Longfellow was born in and all the famous New Englanders lived in. That is, as you



MOUNT VERNON

see, just a plain two or three-story house with its long side facing the street and with a picket fence or hedge around it. It is usually painted white, and has green wooden shutters on the small and regular windows. The only ornament about it is the doorway, just in the center of the front. That doorway is always beautiful, in a quiet, dignified way. There is generally a fan-shaped window over the big door, and a huge brass knocker, which serves the purpose of a bell. Roses climb over the two pillars that

mark the doorway, and a lantern light hangs from the ceiling.

Then there is the Southern mansion type, the best example of which is Mount Vernon in Virginia, George Washington's home. That needs a great deal of ground. Note the huge pillars in front that go up two or three stories. See how hospitable and stately it looks. If you plan a house like that, you must make it large, with a wing on each side and a number of small work buildings and servants' quarters hovering at its back. You will also have to plan some very elaborate grounds.

Of course, if you get to be a rich man or woman you may want an Italian villa in white stucco with a wonderful garden full of fountains and statuary; or an English country house, with its many-gabled roof and its trim hedges. You may even wish the Swiss chalet type, with its very sloping roof, planned for a mountain situation. There is also the Spanish, or Eastern type, of house, made of plaster and surrounding a courtyard with a fountain and palm trees. You can find pictures of these houses in books and magazines, and with a little practice you can plan even them into rooms. But whatever you plan in the way of a home, remember that to make the beautiful house entirely beautiful, you must see to it that in it live kindly, clean, hospitable people, who know how to be happy and make others happy. That is the way to turn your house into a home.

Health Habits

Two words make up the key to our lesson—*health* and *habits*. The first is the name of one of the greatest treasures that we can have in life, and the second leads the way to it. Health is a treasure because it can bring happiness, contentment and success. Sick people are apt to be ill-tempered and down-hearted, because they are unable to do what other folks do. They are tired and nervous and weak. It is very sad and discouraging to be unlike other folks; sometimes even when they try the sick cannot always be cheerful. And no wonder. The days are pretty dreary when we cannot work in the garden, tramp in the woods, go swimming, play games and enjoy all the good things that are intended for us.

Now there is just one way to win this priceless treasure of health, and that is by practicing health habits. That word *habit* is an interesting one. We begin to form habits when we are babies, and we keep on all through life. The kind of habits we form has much to do with the kind of person we grow to be. If we are honest and brave and industrious to-day, and the next day and the next, we become honest and brave and industrious by habit, and in time of sudden temptation or when we must face a test, we will do the right thing because it is our nature to do so. "Thoughts dwelt on become deeds; deeds repeated become habits; habits form character."

When you first learned to skate, to play the piano, or to knit or crochet, you had to think of every motion. Then after a few days of practice you began to do these things without thinking of each step of the work. The reason is that your mind and your

muscles had formed habits—fixed habits, as we say—allowing you to do the things you had learned rapidly and easily. Walking, writing, reading, swimming—all the common acts of everyday life—are done through habit.

Now habits of health can be formed just as easily as habits of everyday living. We should really be very thankful that God has given us this means of getting the great treasure of life. What is needed is a system, because most boys and girls have not thought of winning health in just this way. To help form good health habits it is a wise plan to make a list of the things that should be done, and watch and see that not one is overlooked. Do you not find it easier to do things when you check up and grade yourself?

Here is copy for a Health Score Card, on which we can mark our record every day in the week. There are ten points for each item. The record for Sunday is filled in, to show how it is done. The artist was so sure that you would like to see how nice the card looks when you do everything just right that he marked all the items for Sunday perfect. Will you make them all perfect for every day, and for every week?

Of course you will play fair, and if you brush your teeth only twice, mark off three and one-third points; and if you scold about taking a bath, you will know that you lose on both the first and last items.

BATHING. I do not know where the idea came from, but some little folks think bathing is a punishment. Nothing is more fun than slipping down to the creek and going swimming. It is so much fun that if mother will not let the boys go, sometimes they go without asking! But those same boys certainly object if they have to "take a bath" at home once a week! I think that away back when people

did not have warm rooms or a regular bath tub, and it was cold weather, boys must have had to dab at themselves with cold, wet cloths, and this may have been the beginning of their dislike of baths. Anyhow, somewhere, somehow, boys have gotten the idea that they are abused if they have to take a bath! Let's all learn to like a bath. We have simply formed the habit of complaining about it.

Why We Need a Bath. When we walk or work or think, we destroy nerve and muscle tissue. Small glands pick up this waste matter and pour it out on the surface of the skin. If the waste is not washed off, the openings or pores of the skin become clogged, and the waste matter piles up in the body, poisoning the circulation and making us liable to disease. That is not only an unhealthful condition—it is a filthy one, and really a dangerous one.

Our hands collect dirt from the things we touch—clothes, pencils, books, chairs, playthings, door-knobs, stair-rails; even the inside of our gloves and mittens are lodging places for dirt. A fresh, clean skin is so much more pleasing than one soiled by the refuse left by perspiration and the dirt we pick up from the things we touch, that we would feel more comfortable and safer if we bathed every day. Certainly we should have a full bath at least twice a week.

For a cleansing bath we use warm water and a little mild soap. If the skin is sensitive and cracks or itches when soap is used, we may have two or three small bags of bran or oatmeal and use these in the water instead of soap.

Points. Of course if we do not keep our feet perfectly sweet, or if we forget to wash behind our ears, our score on the chart would be about five, because half-way measures aren't worth much.

BRUSHING TEETH THREE TIMES A DAY. Our teeth are given us to eat with. They cut and grind our food so that the juices which aid digestion can

reach all parts of it. We need them for this work.

Decayed teeth are useless; besides, they may ache and be very painful. The poisons from them may cause a long list of diseases, including stomach trouble, heart trouble and infected joints. Poor teeth must be pulled or filled, which may be very painful and expensive.

How Teeth Decay

The first, or baby, teeth precede the first permanent molar. It is just as important to take care of the temporary teeth as it is of the permanent ones. The temporary set is all we have to chew with until the permanent teeth come. If we cannot chew our food well, what we eat cannot be well digested, and we shall not be well fed. Decayed first teeth may be quite as painful as decayed second teeth. Poisons due to decayed teeth may cause ill health in children and prevent them growing into strong, healthy men and women.

Hard foods which require chewing and foods which furnish lime help make good teeth. Eating sweets is harmful to the teeth, because such a practice spoils the appetite and keeps us from eating enough of the nourishing foods.

At three years of age a child should have all its temporary teeth and be taught to use a toothbrush. Perhaps you can help little brother or sister to brush the teeth, if mother is busy.

If a temporary tooth falls out before the permanent tooth which is to take its place is ready to push through, there is danger that some incoming tooth may crowd into a place where it does not belong. This causes irregular, unsightly teeth. If the upper teeth do not match the corresponding teeth below, one cannot chew well with them. They should come squarely together. Crooked, misshapen teeth are

more difficult to keep clean and they may be very unsightly.

If we have always taken good care of our teeth and continue to do so, and if we eat foods which contain enough lime to make teeth, we should be able to keep our teeth in fairly good condition as long as we live.

Sometimes people say that the third molars, or wisdom teeth, do not last long. That is because they are back so far that it is difficult to clean them well. Wisdom teeth should continue to be as good as other teeth, if we take as good care of them.

When our own teeth can no longer serve us, dentists may make artificial teeth for us. These may be so perfectly made that one looking at them may not know that they are not natural. But the person wearing them can tell. Artificial teeth do not cut and chew as well as natural teeth. With artificial teeth it is difficult to eat such foods as radishes, celery, hard fruits and nuts. Artificial teeth break easily, and they are hard to keep clean. Because our own teeth are so much more satisfactory, we want to take good care of them. In order to preserve them, we must keep them clean.

Bits of foods catch between the teeth and in the edges of the gums. The warm, moist air in the mouth causes these particles to decay. Germs growing and decaying produce acids which eat the enamel of the teeth. When the enamel is cracked, the body of the tooth soon decays. Clean teeth do not decay.

Just back of the lower front teeth, and on the outer side of the upper molars where the crown of the tooth meets the gum, are the openings of the salivary glands. These glands pour into the mouth a digestive fluid. The lime from the saliva may collect at these points, forming tartar. Tartar is much like the substance the teeth are made of. It does not injure the teeth, but it does form a lodging place for

germs which may do damage. For that reason, these points need special attention. If we cannot keep the tartar from forming, a dentist should remove it occasionally. Brush the teeth with a good, medium-stiff brush, and use warm water and some sort of dental cream or powder. Most tooth powders are good; use the one you like best.

In cleaning the teeth we should brush from the gums toward their cutting edges—up from the lower gum and down from the upper gum. Brush with a slightly rotary motion, scouring the teeth clean on both the inner and outer surfaces. Be careful to dislodge particles from all the rough, uneven places, such as the uneven grinding surfaces of the molars, the valleys of the double teeth, and any grooves and pits which may be worn in the surface. After brushing the teeth, rinse the mouth with clear water or water containing lime, milk of magnesia or some other simple sweetener.

You May Have Beautiful Teeth

Every time we eat there are particles to be removed, so we should brush the teeth after each meal. Germs grow more rapidly while the mouth is kept closed during the night, so the teeth should always be cleaned in the evening before we go to bed. No matter how carefully we clean them, there will always be some matter left in the mouth, so that it is desirable to brush the teeth on rising.

If we do not have a brush, we may use a piece of clean gauze wrapped about the finger. For particles which cannot be removed in the ordinary way, use a hardwood toothpick or a piece of dental floss.

It is considered ill-mannered to pick the teeth in public. They should be attended to in private.

Points. Brushing three times a day does not count ten points unless the teeth are scoured clean, nor unless one time is just before retiring.

CLEANING THE NAILS. Finger-nails are very useful and, if well-kept, add much to the beauty of the hand. Broken, dirty, misshapen nails are untidy and may carry infection.

Keep the hands clean by washing them with warm water and a good quality of soap. Scrub the nails with a brush. At least once a day, while the hands are still moist, use an orangewood stick to remove the dirt from under the tips and about the base of the nails. With the blunt end of the stick push the skin away from the base of the nails.

Nails protect the ends of the fingers, and help us to pick up articles. They should be long enough to be of service, but if they are allowed to grow too long they are apt to become broken or torn, and so be less useful as well as unsightly and painful. Once a week file them with a nail file, rounding them neatly, to follow the outline of the end of the finger. Do not file so close as to make the flesh raw.

Points. The ten points are given for Cleanliness, Usableness and Appearance.

WASHING HANDS BEFORE MEALS. Wash the hands the last thing before eating, so that you will not be likely to introduce filth or disease germs into the mouth with your food. Remember that many times a day you touch dirty things. To make hands clean enough for meal-time they must be scrubbed with warm water and soap; it is not enough just to rinse them in cold water.

Points. We should not count points to our credit for merely a dash at the wash-basin and a quick wipe on the towel. No points should be credited unless the hands are clean.

EXERCISE IN FRESH AIR. The children pictured on the chart are having a good time. The crisp air, the fun of making snowmen and coasting, and the pleasure of playing together make a good game. Social games—games which call for a group and keep us a-tingle with friendly rivalry—form an important part of our health work and education.

Muscles which are not used become flabby and useless. When we exercise, old cells are torn down and must be replaced by new ones. New cells give new life. The building material for the new cells is carried by the oxygen of the blood. The more swiftly the blood flows, the more material it can carry; that is why exercise is good; if we exercise in the open air, there will be more oxygen at our command than there could be in the best-ventilated room. That is why working in the fields and gardens is more healthful than working in the house or office. It is why children in open-air schoolrooms usually learn more readily than they do in closed rooms. If it is not possible to take our exercise out-of-doors, the next best thing is to take it in a room with wide-open windows.

Points. You know when you are entitled to marks for vigorous exercise that stirs your blood and leaves you feeling happily tired and still all fresh and new.

DEEP BREATHING AND GOOD POSTURE. The lungs extend from the highest point of the shoulder nearly to the waist-line, and fill the chest cavity except for the space occupied by the heart. The lung cells exchange the impurities in the blood for oxygen, which is contained in the air. Long, full breaths should be taken, to draw the greatest possible amount of air into the lungs, so that it reaches the farthest cells. Stooping crowds the lungs and closes some of the cells so that there is not enough room for air. That is why we link correct posture with deep breathing.

Round shoulders and thin, narrow chests indicate malnutrition. Malnutrition means that we are not getting enough of some kind of food. We may be eating heartily, but it may not be the right kind of food. People who stoop habitually need to give immediate attention to correcting their diet. We shall learn more about that when we study foods.

Stooping crowds the lungs and makes less room for air. It causes the cartilages between the vertebrae which make up the backbone to lose their elasticity, and in time we find we are unable to stand erect. The muscles develop wrong habits. Braces are of no use. Work is good exercise; play is good exercise. We need them both. We also need systematic corrective exercises to develop every part of the body and to correct faulty postures.

Poor standing habits may be due to poor posture in sitting. Seats and chairs which are so high that the feet do not touch the floor, desks too high or too low, cause us to bend forward or to sit with one shoulder higher than the other. Never slump down in the seat. Sit erect, with feet firmly on the floor, back straight, head erect. Stand erect, with the feet a trifle apart, toes pointing straight forward, the arms hanging naturally at the sides. Hold the head erect, chin up, eyes straight forward, chest up.

Practice deep breathing morning and evening. Stand in good position; hands on hips; inhale and exhale ten times. The practice should cause noticeable improvement within a week.

Points. The points are for the practice described above and for permanently correcting any bad standing, sitting or breathing habits we have.

EATING PROPERLY. Because our frame of mind has an influence on the flow of the digestive juices, what were once simply social customs are now recognized as good hygiene. Eating is both a social act and a means of supplying new energy to our bodies.

We like always to appear at the dining table clean, neat and in good humor. Worry, anger and fatigue cause poor digestion. Hands and face clean, hair well-brushed, and clothing neat and orderly give us self-respect, and self-respect means self-possession. Observe common customs and manners; by doing so we attract less attention and feel more comfortable. Some of the common rules as to manners are:

Cut or break the food into small pieces. Do not bite from a large slice of bread or piece of meat. Chew the food thoroughly, so that it will be ground fine, then the digestive juices can act on it more readily. If our food is well-chewed we shall avoid the appearance of gulping it. Do not chew with the mouth open. Do not talk while chewing. Do not devote all your energy to your food, but give some attention to your neighbors at the table. Learn to handle the silver properly. Do not use the knife to carry food to the mouth.

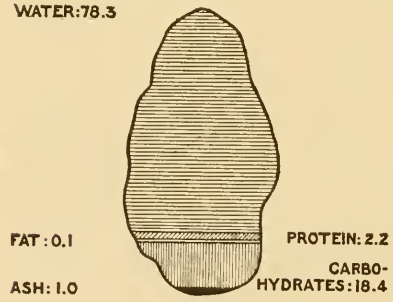
Some good food habits are the following: Drink a glass of water on rising. Drink at least four glasses of water during the day. Drink a pint of milk each day. If you are underweight for your height, drink a quart of milk a day. Eat some fruit and vegetables each day. Do not eat sweets between meals. Never drink tea or coffee. Do not drink "soft" drinks containing drugs.

Study the classes of food and learn to balance your meals by eating some of each class. Find out about the A, B, C foods, and see that you have some of each each day. Never forget that milk is the one best food for growing children. Milk supplies building material for the bones, teeth and muscles. It keeps the heart beating regularly, strengthens the nerves and contains a growing principle that helps weak bodies to grow into strong ones. No other single

article of food contains so many of the various materials especially needed by children.

Points. The points of credit are for following the rules about milk, water, vegetables and fruits, for chewing the food well, avoiding constipation, and for keeping up to the standard weight for your height.

FOODS. The statements in this section are primarily intended to be helpful to mothers. We need food for three purposes: (1) Our bodies use energy to do their work and to keep us warm. So we need *fuel* foods, just as an automobile needs gasoline. (2) When we work we wear out parts of the body. The cells must be replaced by new ones, so we need *building* foods, to make repairs and additions. (3) We need *regulative* foods, to keep every part of the body in condition to work properly. These correspond to the oils we use on machines to keep them working smoothly and to prevent unnecessary wear and tear.



POTATOES ARE RICH IN STARCH AND SUGAR

Fuel is supplied mostly by carbohydrates, fats and proteins. Carbohydrates is a big word which we use to mean two forms of foods whose common names are *starches* and *sugars*. We get starch in the cereals, breads, starchy vegetables such as potatoes, beets and carrots, starchy fruits like apples, and in corn, beans, peas and lentils. Sugar is found in cane and beet sugars, honey, syrups, fruits, vegetables, and in manufactured foods like cake, cookies, jams, jellies and other desserts.

Fats are found in butter, cream, cheese, whole milk, eggs, bacon, fat meat, vegetable fats and oils and nuts.

Proteins furnish some fuel, but they are most valuable for building material, so we will list them with those foods.

The *building* materials are protein and the minerals—chiefly lime, iron and phosphates. There are two kinds of proteins, namely, animal and vegetable. Animal protein is found in milk, cheese, eggs, fish and meat; vegetable proteins in peas, beans, nuts and grains. The protein found in vegetables is not just the same as the animal protein. We need both kinds. The animal protein from milk, butter, cheese and eggs is better than meat for children.

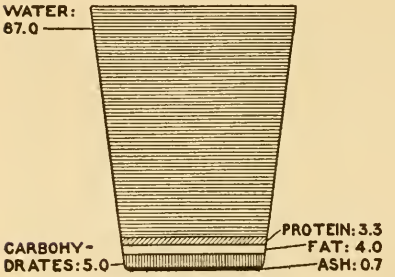
The minerals are very important and necessary, but we use only a small quantity of them. Lime is found most abundantly in milk; this is why milk is such a valuable food. Cheese, eggs and leafy vegetables like lettuce, spinach, cabbage, onions and celery are also valuable. Children especially need lime to form good teeth and strong bones. Iron occurs in beets, prunes, green vegetables, eggs, fruits, cereals, grains and meats. Phosphorus is found in cereals (breakfast foods and breads), peas, beans and lentils, milk, eggs and meat. We use such small quantities of the minerals that if we eat something of all the kinds of food we should eat we shall get enough minerals without paying any attention to the matter.

Regulative foods correspond to what is called roughage when we speak of feeds for animals. They contain a large percentage of undigestible matter—the fibrous part of the leaves, fruits and vegetables, and the husks of the grain. These act mechanically to stimulate the intestinal muscles and help in the elimination of waste products. Some of the fruits, such as figs, dates, prunes and raisins are especially laxative.

Notice in the drawings that most of the foods contain some of several of the different elements, as

starch, sugar, fat, protein and mineral. (The ash is mineral. We list them in the class of which they furnish the most, or for which they are the most valuable.

Foods are classified in another way. Only recently we learned about the *vitamines.* No one knows yet all about vitamines, but all agree that they are very necessary. They help us grow and keep us well. So far scientists have named three kinds. When they were experimenting, they named them A, B and C, and as no one has given them any other names, we still call them by those.



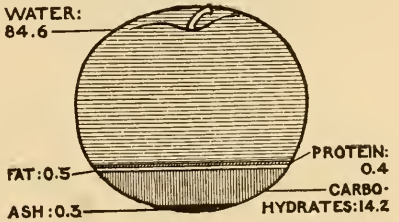
FOOD VALUE OF MILK

A (sometimes called fat-soluble A, because it is soluble in fat) is found especially in milk. When we say milk, we mean whole milk. That is another reason why milk is such a valuable food. This vitamine is also found in the fat products from milk—cream, cheese and butter—the yolks of eggs and in green leaves—lettuce, spinach, and other greens, and cabbage. That is one reason why greens are such good food. It is not in skim milk, so we do not find it in cottage cheese. We must not give all the cream to the grown-ups because "children like milk just as well." Children especially need vitamine A, and it is not in skim-milk. It is not in the substitute butters, so if we use these we must use a great deal of whole milk and cream and leaf vegetables.

B (called water-soluble B, because it can be dissolved in water) is found in eggs and practically all of the common vegetables and in the seeds of cereals. Lack of B in the diet causes a wasting disease called beri-beri.

C (the full name is water-soluble C) is anti-scorbutic, which means that it prevents scurvy. Vitamine C is very necessary, and as the foods in which it is found are very palatable most of us will eat plenty of them. C is abundant in the citrus fruits—in oranges, lemons and grapefruit, in tomatoes and in cabbage. During the World War we learned that the tomato is a very valuable food, and very refreshing as an orange. C is found in most of the other fruits, and in potatoes, onions, carrots and some of the other vegetables.

For a time it was thought that cooking foods destroyed the vitamines, but now scientists believe that foods which are covered while cooking retain their vitamines. This may be one reason why foods cooked in a fireless cooker and canned foods cooked in the jars have such a fine flavor.



CONTENTS OF AN APPLE

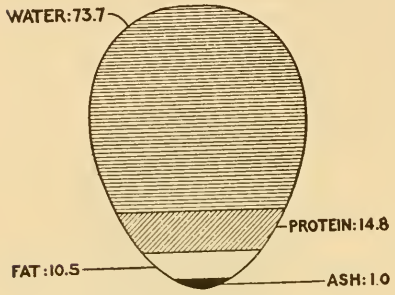
PLANNING OUR MEALS. We need some of all the foods named above every day. If we had to weigh out and measure everything we eat, it would be very troublesome, so we are glad to know that most foods contain more than one element.

If we drink plenty of milk, avoid the things we know to be harmful, plan our meals, select our food with just a thought to eating some cereals, some eggs, cheese, meat, beans, peas or nuts, and some fruits and vegetables our taste will be likely to insure that we do not lack any needed food element.

If we eat for breakfast some fruit, a cereal with cream, a slice of toast or other bread, and drink a glass of whole milk, we shall start the day right. Sometimes we get the mistaken notion that we do not need anything to eat early in the morning. But we

cannot do as good work—we cannot think nor play nor study so well—without breakfast as we can if we eat something. Besides, if we skip one meal we are likely not to get enough food in the course of the day.

By studying a number of cases, we find that it means better health and better work if we have at least one hot dish at lunch-time. Something warm stimulates digestion of our other food and gives us more energy. A soup, cooked vegetable, milk toast and cocoa are easily prepared and do not require much equipment; so any school which wishes to can serve something hot. Both the work and the children's health will improve because of the hot dish.



What We Find in Eggs

Usually we eat our most substantial meal at noon or night. Then we may have a cooked vegetable, a salad, a dessert, potatoes, and a small amount of meat or a meat substitute.

We may like to know that sugar goes directly from the stomach into the circulation and so relieves hunger quickly. If we eat sweets before a meal, we are not hungry, and so do not eat the foods we should have. Sweets should be eaten only at the close of a meal. Fats are digested the most slowly, and so keep us from getting hungry soon after eating.

Liquids. In order that our food may move easily through the intestines, we need plenty of liquid. At least four glasses of water, in addition to the liquids we get in our food, is not too much. We may drink it with our meals or between meals, just as we like.

The stomach and intestines need rinsing out in the morning, the same as our mouth does. A glass

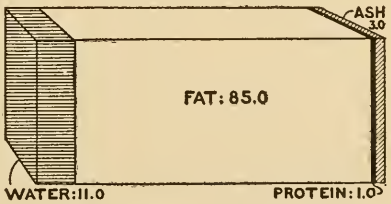
of water after we have cleaned our teeth on rising is a good way to start the day. Water contains minerals, in varying degree.

Of course we all know that children should drink neither tea nor coffee. They have no food value, and contain harmful drugs. Milk and fruit juices are delicious drinks, and are good foods. Some fruit flavors sold at soda fountains may be adulterated with drugs; in that case, they may be unhealthful and become habit-forming.

The drawings appearing in this section show some valuable foods, in diagrams, which will be easy to understand.

WHOLE MILK. A large part of milk is water, but it is still high in food value. Notice the heavy white band near the bottom; this represents the fat it contains. This fat holds the valuable "fat-soluble A" vitamine. The diagonal lines show protein, and the vertical lines carbohydrates, mostly milk sugar. The small quantity of ash contains a large proportion of lime and a small quantity of iron.

BUTTER. Butter is largely fat—the kind of fat that contains vitamine A. There is some protein, the same minerals we find in whole milk, and water-soluble B.

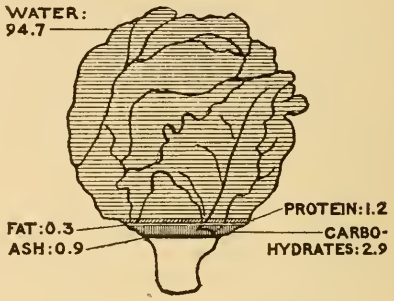


BUTTER IS A BUILDER

EGGS. Did you know there is so much water to an egg? No wonder mother thinks it is important for the chickens to have plenty of water. Of course they cannot lay if we neglect to give them water to use in producing the eggs. The eggs contain water-soluble B; the fat yields fat-soluble A, and the ash has lime in it; so we can understand why eggs are such good food.

LETTUCE. Lettuce is an example of the leaf vege-

tables. There is a great deal of water in all of them and only a small amount of fat, but it carries fat-soluble A. B is found in small quantity, and the ash is part lime and part iron, two valuable mineral foods.



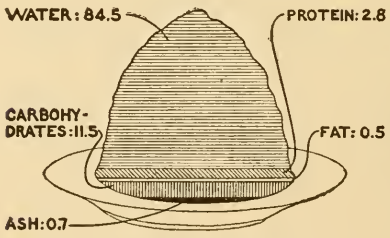
How Lettuce Ranks as Food

Apples. Apples contain considerable water and small quantities of fat and protein. The ash is partly lime, B and C are present, and the carbohydrates mean considerable starch and sugar. In energy value, an apple is equal to a slice of bread. As in most hard fruits and in potatoes, the best flavor and the highest food value are just under the skin.

Potato. Potatoes are very good food. They contain a large quantity of C, valuable minerals, including lime and iron, quite a bit of protein, some fat, starch and sugar.

Oatmeal. This is our standard breakfast cereal. It contains considerable starch and protein, some fat and valuable minerals; because of the rough, indigestible hull, it is a good regulative food.

Sleeping Nine Hours with the Windows Open. Our bodies, like other machines, must have plenty of time to rest. Sleep is the human machine's rest. Occasionally we find someone who keeps well and does good work with less than eight hours of sleep, but those people are exceptions. Because they are exercising vigorously, and growing



In a Dish of Oatmeal

as well as repairing their bodies, children need more sleep than their parents need. They should have nine to ten hours. If we do not sleep, we should lie quietly, with the eyes closed. This is restful, and lying quietly will help to establish the sleep habit at that hour.

It is never safe to rob ourselves of sleep. People who do not sleep enough soon begin to lose weight; they tire easily; their digestion is poor; they become nervous and irritable and readily succumb to attacks of disease germs. Tuberculosis is a common result of loss of sleep and under-feeding. If the body is in good condition, and resistance high, we overcome germs; if we are underfed, overtired and generally careless of our health, some of the germs will get the better of our army of disease fighters, the white corpuscles of the blood.

It would be foolish for us to expect to rebuild our strength while breathing foul air. The sash in the windows of the sleeping room should be down from the top and up from the bottom, so as to let in the greatest possible amount of air, and give free circulation.

Points. Points are for remaining in bed nine hours, with the windows wide open.

DOING A KIND ACT. Be kind. Be helpful. It is as easy to help people as it is to hinder them. It is more pleasant to be kind than it is to be cross—more pleasant for us and for others. We owe it to the people we meet to be courteous, cheerful, helpful, and so to do our share to make this a good world to live in. Sometimes a kind word or a cheery smile does more than giving money or doing some big thing. Try to make those about you comfortable and happy. If they are discouraged, give them courage; if they are lonely, work or play with them; if they are sad, cheer them up. Your character grows in time to reflect your impulses.

Points. You will know when to credit yourself ten for kindness. Do not become priggish and conceited while keeping this score. Give yourself no points if you make any person unhappy or treat any animal harshly.

KEEPING CHEERFUL. It is as easy to be cheerful as it is to be gloomy. Never waste any time feeling sorry for yourself. Never worry about anything. If you can help it, do so; if you can't, worry will not help matters.

Cheerfulness means better health. It is really true that feeling follows its physical expression. If you sing happy songs and smile, you will begin to feel happy. If you smile at people, they will smile back at you. Think about all the good and pleasant things there are in the world, and smile.

Points. No points are to be credited if you scowl, or sulk, or scold.

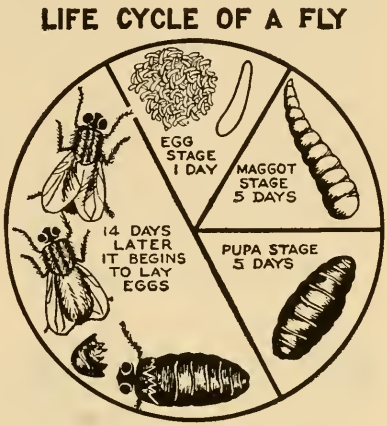
Every thought we think, every thing we do, is a part of our building. We are just the sum of what we think and do. We can make ourselves good citizens or bad; we can be happy or dismal; we can be worth-while or no-account; we can be the sort of persons that people are glad to see, or the sort from whom everyone runs.

Let us keep ourselves clean, healthy, cheerful, happy, worth-while girls and boys, and so grow into good citizens of our glorious country.

THE FILTHY FLY. The accompanying pictures show the way flies and fly eggs look in all their stages; we may therefore know them whenever we see them. Fly eggs or maggots or pupa will develop into flies unless they are destroyed. Never leave them to hatch, for they spread disease.

Notice the group of small white objects and also the larger one, which has been magnified to show it more distinctly. A fly lays about 120 eggs at a time, and repeats this four to six times during her life.

Think how many flies may come from the one fly that you let get away in the early spring! Do not let any get away. Kill the first ones, and keep the home clean, so there will be no more.



At the end of about twenty-four hours, fly eggs hatch into maggots. Notice the drawing in the second section. You have seen crawly, wriggly maggots on manure heaps, on decaying meat and wherever filth is left long undisturbed. If you find a heap of maggots, do not go away and leave them. Pour boiling water over them and kill them.

At the end of five days, maggots develop into pupae, like the wrinkled case you see in the lower left-hand part of the circle. After five more days, the fly, which has been growing inside the case, becomes so large that it breaks the case and pushes its way out. Fourteen days later the females lay more eggs to produce more flies.

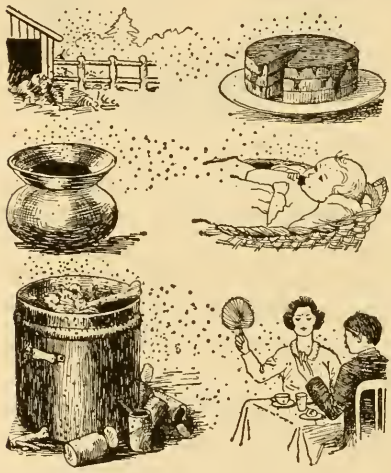
The history of the fly is not a pretty story. It is disagreeable, and we would rather not talk about it. But the more we learn about it, the less we shall want to live with it, and the sooner we shall find some way to get rid of flies. There should be no room in the same home or in the same town for flies and people.

One of the pictures shows why a fly is so disgusting an insect, and why it is so dangerous. It is because it is hatched in filth, lives in filth, and carries filth wherever it goes. Ninety per cent of the flies are hatched out in manure heaps. Manure fur-

nishes food for the maggots which hatch from the eggs, and for the young fly.

Flies like clean food, too. When one gets the odor that tells it we are baking a cake in the kitchen, it leaves the manure heap and comes to taste the cake. When a fly lights on our cake we do not know where it came from, but we may be certain that it came from some dirty place. Cuspidors, garbage pails and outhouses are their favorite feeding places. They may come from any of these direct to us.

The poor baby is quite helpless when a fly comes his way. In the first place, he does not know that a fly is dangerous, and so does not know enough to try to get away; in the second place, the baby is helpless. He cannot run; he is too little. The dirty fly which was sitting on the garbage heap may come to sit on the baby's nose, or his hand, or on the nipple of the milk bottle. We should never let a fly come near the baby, or the baby's food, or his playthings, or anything which belongs to the baby.



Routes of the Filthy Fly

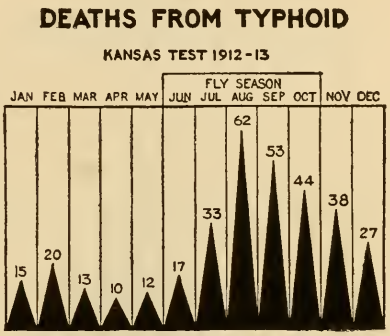
Are there any uncovered garbage pails in your back yard, in the alley, or anywhere near your house? They are breeding places for flies. If they cannot be protected from flies, sprinkle them with borax, then spray them with water. This will kill the fly eggs. Health officers should be told about any filthy places which you cannot dispose of.

Flies are more dangerous than tigers or rattle-

snakes. The doctor who knows the most about flies says that a fly is the most dangerous living thing known.

Have you seen people at dinner in a place where there were so many flies that it was necessary continually to fan them away while eating? That isn't simply disagreeable and dirty; it is dangerous! Think of the places those flies may have frequented before they invited themselves to eat with you!

A fly's whole body is covered with hairs. The hairs pick up particles of filth, and these may be left wherever the fly sits.



The charts show some of the mischief done by the fly. He spreads two very dangerous diseases — typhoid fever and what is commonly called "summer complaint." It isn't summer complaint only; it is as truly *fly* complaint.

Notice how many more deaths there are from typhoid fever and other intestinal diseases during the months when flies are most numerous.

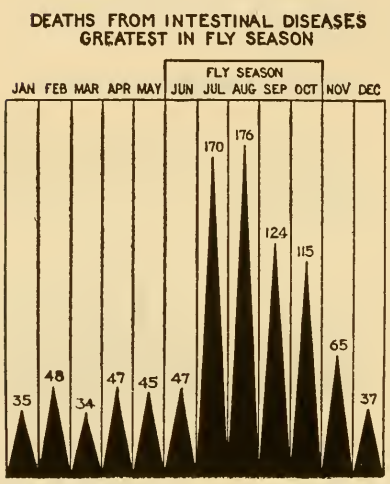
"A fly is more disgraceful and dangerous than a bedbug." A bedbug is not disgraceful. Because you find one about the house it does not necessarily mean that you are not clean. A bedbug lives in clean places—clean beds, old magazines, behind the wallpaper. He doesn't go looking for manure heaps and outhouses. Flies mean that there is dirt somewhere near, because flies hunt dirty places in which to lay their eggs.

A bedbug isn't dangerous. He doesn't go running from one place to another carrying disease with

him. He doesn't go anywhere. We wish he would. But he stays right where he is. The fly is dangerous. He carries disease.

You would not think of eating a slice of bread over which a bedbug had walked, but you eat bread that the flies have crawled over. And one fly may carry 6,000,000 germs on its body!

Keep flies away from milk. They may leave typhoid fever germs in it. Never buy fruit or vegetables, or bread, or meat, or cookies, or candy in a place which harbors flies. If we do not buy from dirty storekeepers and dairymen, they will have to clean up or go out of business.



In the country live stock brings flies. We have all to work together. Let everybody agree to keep clean, to sprinkle filth with borax, to use traps, fly swatters and poison, and keep everlastingly at it.

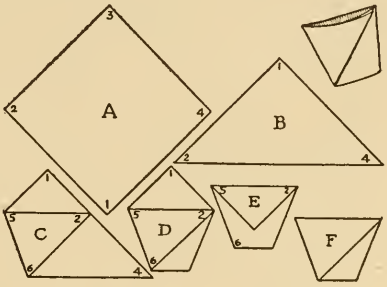
THE PAPER DRINKING CUP. Many disease germs live in the mucous lining of the mouth and are carried from one person to another by means of a common drinking cup. Diphtheria, scarlet fever, pneumonia, tuberculosis, sore throat and common colds are spread in this way. Paper cups are easily made, and may be burned after using.

Take a clean square of paper (A). (Do you know how to square paper by folding it diagonally and tearing off the extra length?) Lay it on the desk so that one corner points toward you. Take

hold of the corner nearest you (1), fold it up to meet the upper corner (3), and crease and fold from 2 to 4, making the triangle B.

Now take corner 2 and fold it up to meet the diagonal line from 1 to 4. Fold it so that the line 5 to 2 is a horizontal line. Crease the fold from 5 to 6. See Figure C.

Turn the paper over and fold corner 4 to meet the upper right-hand corner (5), keeping the top line horizontal as we did in folding 5 to 2 and forming a similar triangle. Turn the paper over and it should look like Fig. D.



How to Make a Drinking Cup

We can take point 1 and fold it down over 5-2-6 and fold point 3 down on the other side, but the folds do not stay in place.

In order to hold the folds, we place the fore-finger at corner 5 and the thumb midway on the fold 6-2, and press so as to make an open pocket of 5-2-6. Fold point 1 smoothly down into this pocket and crease across the top edge. Turn the paper over and fold corner 3 down into the pocket on that side. Now our paper looks like the figure showing the completed cup. Press it open and you will see that you have a good cup.

Thrift

The new verse on the chart panel about the old woman who lived in the shoe tells us that she was a wise woman. She says, "I'll start right away to teach them to save." I suspect that such an energetic lot of girls and boys as they were already knew how to earn. These boys and girls and their mother probably never head of canning clubs, corn clubs, garden clubs and other plans for making money and keeping busy at something useful, but they must have known of other interesting things, for the bright-eyed boy or girl never yet lacked the chance to earn money.

We are going to write about something which is very important both to boys and girls—to boys first, because they must meet the world face to face when they grow up and must struggle for themselves and for others; and to girls next, for upon them will fall duties just as important, in helping in homes of their own sometime in the future to set a proper example of saving, in order to become independent.

Our subject is one of the most important in all the world. Robert Burns, the beloved Scotch poet, really told our whole story when he wrote—

> To catch Dame Fortune's golden smile,
> Assiduous wait upon her;
> And gather gear (gold) by every wile
> That's justify'd by honor.
>
> Not for to hide it in a hedge,
> Nor for a train-attendant;
> But for the glorious privilege
> Of being independent.

The feeling of independence—being able to take care of ourselves physically and financially—is per-

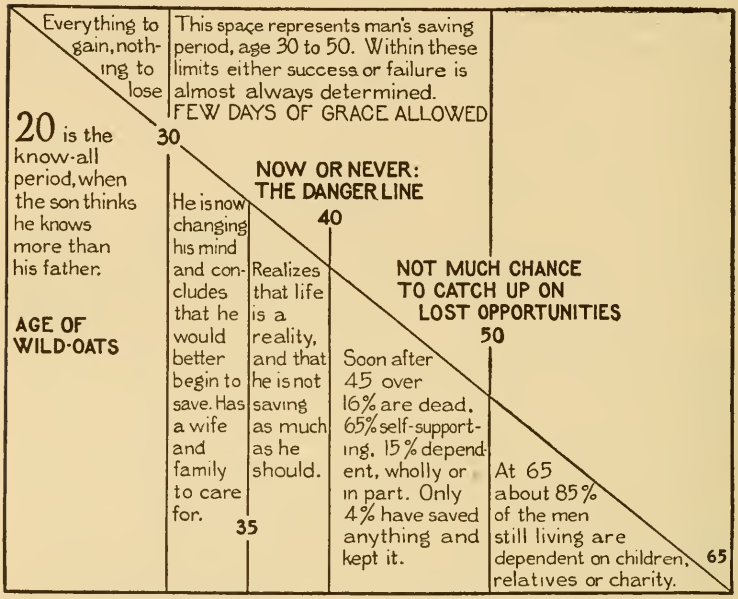
haps the most satisfying feeling in the world. None of us wants to be dependent on others for the bread we eat, for the clothes we wear or for the place in which we live. Of course *we* do not expect ever to be fed and clothed by others. But look at the chart and see how many people are. Look about you at the people you know who are dependent on others. It may not be their fault. Perhaps they have been sick; perhaps they used their money in caring for others; perhaps lost it in some way for which they were not to blame.

At the bottom of a great deal of our success in living in the way we should live is money, rightly used. And what is money? We cannot explain here why it always has value which seldom varies or why everybody knows a dollar bill will always buy a dollar's worth of whatever you may want. You will learn all about this some day in your high school or college studies. Just now we wish to show you that almost the greatest duty you owe to yourself is to know something of the right use of money. Nearly all people refuse or neglect to learn this lesson, for only one man in twenty leaves enough behind him at death to pay the undertaker. It would be sad if some day you found yourself among the unfortunate ones.

Society ought to be organized so that no one who is industrious, honest and frugal, should come to want. But as yet it isn't and there are a great many people who are all the time under obligations to others. Even if folks are kind and generous and glad to help us, we are happier and more self-respecting when we pay our own way. If we should be among those who become dependent at fifty or fifty-five years of age and should live twenty years or more after that, we would be very unhappy at times.

It isn't a pleasant prospect, is it? Now is the time to provide against such a situation. We must lay by something *now* that we can depend upon to

support us when ill-health, age or changed labor conditions make it impossible for us to earn enough to support ourselves. It does not seem as though things could happen to us, but they do happen to



A Diagram That Tells a Serious Story

others, and we may be no exception; emergencies do come, and we must be ready for them.

Money can be one of the most useless things in the world, for it is good for nothing unless it can be used to provide what we need to live properly. A man who is alone on an island in the sea, no matter if he possessed a great chest of gold coins, would be poor indeed. He could not use his wealth for any purpose; he could not eat it, he could buy nothing with it; it would not clothe him or gain him shelter from storm or cold.

So he could not consider his money as wealth; if he were never rescued his gold would mean no more

to him than the rocks on the shore of his island home.

In our case, as in his, living as we do among relatives and friends and with every comfort at hand, money is good only for what it will buy for us. But just because we get ten dollars or a hundred dollars we have no right to rush out at once and spend it all, even though there are many things we would like to buy. Some day we shall have still greater needs, and perhaps then not have the money to satisfy them.

Almost anybody can earn money. It is a harder thing to take care of it after it is earned; it requires brains, patience, determination, to lay aside a certain portion of earnings for present needs and another portion to be kept for future necessities, not to be wasted now on things which are not necessary to our comfort.

A spendthrift has friends only when he is spending his money; they forsake him when his money is gone. He then sees that squandering anything is vulgar, and that those who waste come to want.

So long as we live there will never come a time when we will not need money. We can earn money by using our muscle or brain power to do things people need done, or by originating some better way of doing something, or by making discoveries of something worth while. But there are times when no one wants to pay for having work done; then the man who earns money by using his muscle or his brain must have something laid by to live on until there is work to be done. Be as careful as we may, most of us are ill some time. Teeth need to be fixed, eyes need glasses, doctors and hospitals and medicines cost money. It seems as though we need money more than we need almost anything else.

Don't let us make a mistake about this. We have proved that money of itself is of no use whatever; it is valuable only as it will provide us with what we need. We do not want to become miserly and save

money just to have it; it will do us no good then. We save wisely so that we may have money to spend wisely.

A great man once wrote to his son, "Earn a little; spend less." It was his idea that one does not need a great deal of money if he takes care of what he has. That is the real basis of thrift. It is very true, too, that if one is thrifty in money matters he is quite sure to be thrifty and sensible in other directions.

The greatest authority in the world—the Bible—preaches thrift. Do you remember that it says, "Go to the ant, thou sluggard; consider her ways and be wise." Ants are hard workers, as you will learn by observing them, and they allow no shirkers in their colonies. If an ant will not work, his fellows destroy him.

You are also familiar with the little verse beginning:

"How doth the little busy bee,
Improve each shining hour."

The class of honey bees called workers are truly workers, and very busy ones, all of the time, gathering pollen from flowers and carrying it to the hive or nest to be converted into honey. If a worker bee lags on his job or gets into the habit of playing "hookey" his more industrious fellows have been known to sting him to death.

We see from these two examples in the insect world that all created life is intended to be kept busy. The ant and the bee gather their food and store it against the time of year when no food is to be had. They do it through instinct. Good judgment should show human beings that they should be industrious and thrifty for the same reason.

Now what is the real meaning of thrift, in its broadest sense? Thrift means making the best use of our time, health, energy, brains, as well as money, over the period of our life. It means looking farther

than tomorrow—not spending foolishly now and coming to want later. None of us knows how long he is going to live, nor what future circumstances will be, but it is wise to plan, as life insurance companies do, on the "average expectancy," and then some, in addition, for emergencies.

When we are young we need so many things—education, travel, good clothes, good times; we should spend some of our time and thought and money in the service of others. To provide for all these and also to keep an eye on the future is a big undertaking. Few of us have the money or time to take advantage of all the things it would be good to do. We have to apportion (you know what that means) our money, time and energy to cover our needs as best we can. One of the most important things for which we need money is to put some of it away to use at a time when we need it more than we need it now. There is this about money: It can be put to work for you. If you lend it, it gathers interest while you sleep. It may rain, you may be ill, you may even go fishing—but money saved and put at interest keeps working all the time.

Invest $5 every month at 4 per cent, and at the end of five years it will amount to $335. Suppose that at thirteen years of age, you begin to save $5 each month. By the time you are eighteen and ready to go to college, you will have a nice sum for your education, and education is a wonderfully profitable investment.

In twenty years, $5 a month will amount to $1,848.30. If mother and father put $5 in the bank every month for the baby, wouldn't that grow into a nice sum by the time the baby has grown and is twenty-one?

Abraham Lincoln said, "Economy is one of the first and highest virtues. It *begins* with saving money." Notice that it begins with saving money.

We must save some. But we must not stop with saving money. We must save other things. Time is one of them.

There are twenty-four hours in a day. We cannot stretch that any. If we are to be well, able to do our work, bright, alert, and ready to take advantage of opportunities and perform our duties acceptably, we must sleep at least eight hours of the twenty-four. Those who need more sleep should plan to take more —nine or nine and a half hours, if needed. That leaves us sixteen hours to use.

We cannot spend all our time at productive work or at school. There are things to do just to keep living—bathe, dress, comb our hair, keep our nails in good condition, put our room in order, mend our clothing, go to and from school or work, help other people, take some part in community affairs—church, social life, welfare movements, have some amusement, take some regular physical exercise, and do some serious reading. Then we need some time to think—to look back over the day and forward into the future and plan our course of action. It almost seems as though we should find ourselves shorter of time than we are of money.

With so many things to do, which will you do first? How much time will you give to it? What will you do next? Some folks are always complaining that they have not time enough to do things. Those people have just as much time as the rest of us. The trouble is that they do not systematize their work. Have a plan and work to it. It is remarkable the things which one can do, working little by little. "Tall oaks from little acorns grow." Even a small amount of time spent regularly every day will count up. Fifteen minutes a day given to corrective physical exercises will keep you erect, your joints limber, help your circulation and respiration. Fifteen minutes a day for ten years amounts to 112 working

days of eight hours each. Is it any wonder that you notice it in your physical condition? Perhaps you waste fifteen minutes a day. Think of the time you are wasting. One man wrote a great book in fifteen years by using fifteen minutes every morning before his family was out of bed.

Benjamin Franklin, one of the most famous advocates of thrift, was one of the best educated men of his time. Yet he never went to school. He was a poor boy and in those days there were no free schools. He learned all he knew by studying evenings and by observing what was going on around him. You will like to read Franklin's maxims—"Poor Richard's Sayings" they were called when he published them in *Poor Richard's Almanac.* Franklin's biography is as interesting as any wild-west story, and it is all true.

One way in which we waste time is by reading worthless books. There are so many books it is not possible to read them all. Read those which are worth while. There was a time when people did not understand how to write about worth-while things in a way that made interesting reading. Now, no matter what the subject, there is an interesting book, written in language that you can understand. It is better to invest your time and money in one such book than to waste it on trashy literature.

Conversation may be about worth-while things; picture plays should be of some value; games and other amusements may be instructive as well as amusing. We do not mean that we should never play nonsense games or see funny pictures. Sometimes we need to rest and forget all the things we have been working with. Then utter nonsense may be what we need, and it is economy to spend time that way. But light books, plays, and games need not be trashy ones.

Good music is educational; cheap, "jazzy" music

is demoralizing. Do not spend money for amusements which you cannot remember with pleasure.

If you make appointments, keep them. It is good training for you. It enables you to plan your time to better advantage, and it avoids wasting the time of others. When you are five minutes late at school or at breakfast, you waste not only your time but that of others. Trains and opportunities do not wait. Form a habit of being on time.

Just being at school or at work is not enough. If you are sleepy, tired, nearly sick, or the mind is busy with a ball-game, a new dress, or a party, you might as well be somewhere else. When you are supposed to be "on a job," that means with all your faculties. You must be "up and coming," alert, interested, full of vim, making time count. You cannot be at your best if in poor health or if you lack sleep, or if the digestive organs are not working properly. You must keep yourself in condition to work.

You must conserve your teeth and eyes and not overtax the heart and other organs, so that they will last in good condition as long as you need them, until fifty, sixty or maybe seventy years old. Only a foolish person would be careless of his health when he is young and then pay for it all the rest of his life. He may live a long time. Playing strenuously, riding a bicycle too long or too hard may injure the heart muscle. As you grow older it may fail to do the work you want it to do. Colds do not seem to amount to much, but common colds lead to a long list of serious diseases—so many that some physicians say that most of the illnesses which develop after people are forty years of age are the results of colds neglected. Take care of your health.

Do not use your energy for foolish, useless, unimportant things. Do not fret and fuss over things of no consequence. Briefly, take an inventory of the things you want to accomplish, the time, money,

energy, you have to spend, and then plan to make the wisest use of your capital.

It is easy to acquire a habit of idling over your work. Occasionally keep a record for a week. See how much time you spend bathing, dressing, combing your hair, getting ready for your day's work. Is it too much? How can you shorten it?

Check up on waste motions you make in setting the table, feeding and watering the stock and other daily tasks. Efficiency experts have made great saving in the time required to lay brick and to do similar common work, simply by showing the men how to avoid waste motions.

What is your most wasteful habit?

Write down all the things you should do (1) in your present business; (2) in preparing for the future; (3) in doing your share as a member of the community. Decide on the time needed for each, and make a plan to work by.

Make a list of examples of waste around your home—waste of time, food, strength, clothes, money, etc.

Do you know how much money is spent for you in a year? Ask mother to tell you how much your shoes and stockings, dresses, hats, coats, suits, mittens, books, games and other things cost. The bedding on your bed, the curtains, towels and other furnishings, the dishes you use, all cost someone something. It takes time and money to keep things clean. The food you eat costs money at the store, or it cost seed and land and somebody's time to grow it and gather it and cook it. Fire and lights, books and magazines —count them all in. Really, doesn't it seem as though you would have to do something worth while in order to be worth the time and thought and money and care that have been spent on you? Are you going to do something that will help make the world a better place to live? If so, you must plan your time and

begin now. With health, friends and a knowledge of how to earn your way, you can accomplish a great deal. Head, Heart, Hands, and Health, all have to work together if we are to accomplish anything.

YOUR HANDS AS REMINDERS. Let us name the right hand *I Will.* Now, hold up your left hand, and we will name the digits on it. Spread the fingers apart so that we can see each one. With your right fore-finger, touch each digit on the left hand and give it a name. Thumb, Plan Something; Fore-finger, Learn Something; Middle finger, Earn Something; Ring finger, Save Something; Little finger, Be Somebody! Now, if you really mean to do something, double your right hand (I Will) into a fist, bring it down on the palm of the left hand, and finish the story with emphasis, *"Begin Now!"*

YOUR BANK. In your desk is a little bank, in which you should regularly deposit your pennies, dimes and quarters. It is as truly a bank to you as is the big bank downtown with which your father does business. Every piece of money you put into it is a deposit. The amount grows larger as you add to it, and some day will be so large that you will be proud of your effort in saving. That money will be your servant, and it will afford you much joy and satisfaction as you realize what opportunity for independence it places in your hands.

The American Bankers' Association loses no opportunity to teach people to be saving. Here is a recent statement printed by it on the subject of—

THRIFT

Without me, no man has ever achieved success, nor has any nation ever become great.

I have been the bedrock of every successful career, and the cornerstone of every fortune.

All the world knows me and most of the world heeds my warning.

The poor as well as the rich may have me.

My power is limitless, my application boundless.

He who possesses me has contentment in the present and surety for the future.

I am of greater value than pearls, rubies, and diamonds.

Once you have me, no man can take me away.

I lift my possessor to higher planes of living, increase his earning power, and bring to realization the hopes of his life.

With me, a man may be well-dressed, well-housed, and well-fed.

I insure absolutely against a rainy day.

I drive want and care and doubt away.

I guarantee prosperity and success to those who possess me.

I have exalted those of low degree, and those of high degree have found me a helpful friend.

To obtain me you need put out no capital but personal effort, and on all you invest in me, I guarantee dividends that last through life and after.

I am as free as air.

I am yours if you will take me.

I am THRIFT.

Good Manners

When you come into the house, are you careful to clean your shoes, to close the door quietly, to hang your hat and coat where they belong? If mother asks you to care for the baby, do you growl and sulk and say, "Aw, let Mayme do it," and then jerk the baby until it cries and mother has to take it?

If you say "No" to the first question and "Yes" to the second, let us see what it means.

If you do not wipe your feet, you are *careless;* if you bang the door, you are *noisy* and *rude;* if you throw your hat down, you are *disorderly;* if you growl at mother, you are *surly* and *disrespectful;* if you say, "Let Mayme do it," you *shirk;* if you jerk the baby, you show *ill-temper* and *cruelty;* if you force tired, busy mother to take the baby, you are *selfish.*

Is that the kind of man or woman you want to be? Of course not. But boys become men, and girls grow into women; and the kind of boys and girls they are indicates what they will be some day as men and women.

When tired, busy mother took the baby, did you feel happy and proud of yourself? Do you get any fun out of playing when you have left the chickens with no water to drink? Are you comfortable when you have teased sister until she cries, or when you have cheated in a game or in tests, or when you have quarreled with your playmates? Do you feel right after you have been rude, or when you have failed in what you know to be the right thing to do? If you disappoint people who trust you and depend on you, or do not live up to your own knowledge of what you should do, do you get any comfort out of that?

You must determine to carry your own load, then to help the other person. "Do unto others as you would that others should do unto you."

LAWS GROW OUT OF THE NEED FOR THEM. If you are unfair, why should not others be unfair in dealing with you? If you strike a playmate, he may strike back, and soon there will be no respect for anybody's rights.

In thousands of years of living in groups, people have worked out ways of doing things which everybody accepts as standards. If in a game a ball falls back of a certain line, it is a foul ball; when we meet anyone, each turns to the right; if you are growing a garden, no one has a right to trample it; and so on. If there were no rules by which to play games and do business, there could be no games and no business.

Ethics deals with standards of conduct—our duties and responsibilities to ourselves, to others, to society in general. You will understand the term better if we call it *good manners;* there is no difference in the meaning.

So large a part of our duty to others is covered when we follow the commonly accepted rules of conduct that the panel on the chart is all devoted to good manners. If we are truly kind to others we shall not be likely to abuse their confidence by being dishonest, or unjust, or disloyal, or failing to keep our promises, or taking advantage of them in any way. If we have the self-respect which comes from keeping ourselves clean, and courteous, and decent, we are not likely to allow ourselves to become selfish, lazy, obstinate, fretful or cowardly. We cannot maintain our self-respect unless we live up to our own standards and do the right thing by others. "I am as good as others" means that I must show myself as kind, as noble, as self-sacrificing, as true and fine as any one else.

STANDARDS. It is easy to do the right thing when everyone around us always does the right thing and

always expects us to do the same. It is more difficult to speak the truth when our companions tell untruths.

One of the first things to do is to set up your standards—the things you know to be right, the rules of conduct worthy of the sort of man or woman you want to be. Then never let the fact that "everybody else does it" tempt you to do anything which is not in keeping with your standards.

BE CHEERFUL AND GOOD-HUMORED. Doing right does not mean that we should go about with long faces and never be jolly and light-hearted. Being happy is a duty as well as a pleasure. We have no right to inflict our worries and ill humors on others. When you receive an invitation it asks for "the *pleasure* of your company." That means that you are expected to contribute to the enjoyment of the gathering. It does not mean that you shall indulge in unworthy, questionable activities or pastime, or do anything in a rude way.

GENTLENESS AND REFINEMENT. "Kind hearts are more than coronets." If we think kindly of folks, we are sure to act kindly toward them. We speak of "refinement in dress." Fashions in dress change. We do not dress according to the standards of our grandparents but, like theirs, our dress should be modest, not loud or vulgar. There is also "refinement in speech and actions." Never be betrayed into using coarse, indecent language. Do not think it is smart to overlook even the small courtesies. Always be respectful, obedient and attentive to parents and others in authority. Gentlemen remove their hats in the presence of a lady and never remain seated when she is standing. They look after the comfort of women, children, the elderly and the unfortunate. They are kind to animals. They are not snobbish.

Rudeness, which is lack of courtesy, immediately proclaims to all the world a lack of good breeding. People who are accustomed to observing the civili-

ties have acquired the habit. No amount of brains, money or achievement makes loud-voiced, quarrelsome, ill-bred people welcome among those who are really refined.

Learn self-control. Do not cry, and cringe, and be cowardly and babyish. Do you look always on the dark side of things. Look at both sides of a subject, but choose the bright side. Curve the corners of your mouth upward, and smile rather than complain. "He that ruleth his spirit is greater than he that taketh a city."

NEIGHBORLY DUTIES. We all know the accepted virtues—to be truthful, honest, faithful, industrious, to be on time, to do our best, never to cheat or lie or steal, never to run away from duty, to confess when we are wrong, to be charitable in our thoughts as well as with our money, generous in overlooking other's faults but helping them to correct them, to do an honest day's work, to be loyal to our country and the right.

CITIZENSHIP TRAINING. We who live in a republic have a very great responsibility. We help to make the laws. If we are cruel or unjust, we are likely to favor cruel, unjust laws. If we are dishonest or selfish, we may try to make vicious laws which work to our personal advantage and are unfair to others. We shall not be strong enough nor wise enough to do right in big things if we do not train by doing right in little things.

A wise man once said, "I take off my hat in respect to the future senators, counsellors, teachers and other great men and women who may be among these boys and girls." "He that is faithful over few things, him will I make ruler over many things."

Former Secretary of The Interior, Franklin K. Lane, imagined the flag talking to him the morning of the Fourth of July. It said to him, "I am what you make me, nothing more.....I am all that

you hope to be, and *have the courage to try for*..... My stars and stripes are.....bright with cheer, brilliant with courage, firm with faith, because you have made them so out of your hearts. For *you* are the makers of the flag, and it is well that you glory in the making."

It is our flag. Not simply because we live under it, but also because we make it what it is. So there are very big reasons why we should learn what is the right thing to do, and then do it.

GOOD ASSOCIATIONS. We grow like the things on which we set our thoughts. Good books, good pictures, good music and good friends are great helps. There are so many good and wonderful things to learn about that no one has any time to give to vicious or worthless things. No thrilling story contains more excitement than the true stories of great people.

The conversion of St. Paul; the "very parfit, gentil knight," Sir Galahad; Joan of Arc (leadership, heroism, humility); Joaquin Miller's story of Columbus with its stirring command, "Sail on! Sail on! Sail on! and on!" (If you know you're right, keep going); the hardships, bravery and ingenuity of the early settlers; the perseverance of Field in laying the Atlantic Cable; the determination of the French soldiers at Verdun who took for their watchword, "They shall not pass;" Helen Kellar, blind, deaf, and dumb, but a useful, successful, cheerful woman; Florence Nightingale; Frances Willard; Susan B. Anthony, and a host of others who have helped to make the world a better place in which to live furnish stories which can inspire every boy and girl throughout all their lives.

If you are tired of hearing the *names* of Washington and Lincoln, read the *stories* of their boyhood and achievements, and see how much those names stand for. We do not have room here for stories of these

people, but you will find them in the library, and you are sure to enjoy them.

Moving pictures do not need to be about foolish or vicious subjects. There are just as interesting ones which have nothing degrading and which are worth while. "Whatsoever things are pure, whatsoever things are holy, whatsoever things are of good repute, think on these things."

REMINDERS AND FORCE OF HABIT. You will find good maxims and verses pinned on the wall or placed in a book where you see them every day to be of great aid to you. Commit to memory good poems. Build within yourself a desire to do the right.

But good wishes do not make good actions. Between the wish to be good and being good lie years of patient, persistent, constant effort. Resist temptation in little things; then when the big test comes a habit has been formed, and you then see how easy it is to do right.

A certain man has a motto, "This day I will beat my own record." It is not someone else's record, but *his own*. Never mind what the other fellow is doing. Do yourself a little better today then you did yesterday. Work a little harder, learn a little more, be a little kinder, a little more trustworthy.

HEREDITY. Don't blame your shortcomings on inheritance. If your ancestors were not just as industrious, as brilliant, as trustworthy as you want to be, that simply means that you have to guard against those faults and strive harder. If you are inclined to be tardy at appointments or weak in arithmetic, just work a little harder along those lines.

You do not need to associate with others who are not the right sort, but you cannot get away from *yourself*. Make yourself into the kind of person you like to be with. In order to be sure that you are accomplishing something, plan constantly to overcome some fault and add some good quality.

PHYSICAL CONDITION AFFECTS MORALS. Good health gives us a wholesome outlook on life; it makes us strong and quick and sure. Indigestion means bad temper; bad tonsils and adenoids make people cross and selfish and interfere with the hearing so that they seem inattentive. Undernourished folks are nervous, fretful; overfed folks are sluggish and lazy. Eye and ear troubles which prevent our hearing or clear understanding leave us without work, and idle folks are almost certain to get into mischief. These ills can be overcome by medical treatment. Plain, nourishing food, comfortable clothing, physical exercise and mental occupation are necessary to a healthy moral outlook on life.

THINK OF THE OTHER FELLOW. It is a good rule to try to make people think more highly of themselves. Pride of the right sort and self respect are good stimulants. Instead of jeering at those who fail or who are different, cheer them. Let them know that you believe in them. Help them to believe in themselves. "I'm sure you can, if you think you can; I'll help you." It is astonishing how much we can do when the need arises, if we but *think* we can. The Boy Scout rule is, "I will do a daily good turn."

"So nigh is grandeur to our dust,
So near is God to man,
When Duty whispers low, "Thou must,"
The youth replies, "I can."

SERVICE. This is the age of *service,* not *selfishness.* What can you do for your community? You can help to keep the yards and streets clean, destroy weeds and plant flowers, dispose of rubbish properly, protect and repair property instead of defacing it; help in good movements will make it a better place in which to live. Do your share, and then, if necessary, a little more. Carry your own load and then offer the other fellow a lift. Be an example to others.

Good work, good will, good fellowship are contagious.

The city of Trenton, Missouri, has for its motto, "Get acquainted with your neighbor, you might like him." And you might work with your neighbor to make your community a better place in which to live. We are all dependent on one another. Living and working in harmony makes it easier to get things done, and is pleasanter.

Study what needs to be done; learn how it can be accomplished; fit yourself to help in the work, then stay by it until it is done. Aren't there big reasons why we should improve our time so that we can do our share of the world's work?

"Four things a man must learn to do
If he would keep his record true:
To *think* without confusion clearly,
To *love* his fellow-man sincerely,
To *act* from honest motives purely,
To *trust* in God and heaven securely."

PROBLEMS

Can you think of any situation in which it would be right to tell a lie? To break a promise? To disappoint others?

Is it easier for a policeman or a soldier or a fireman to face death in a good cause than it is for you to do so? Does their training and discipline help?

How can you help make things easier for mother?

Is it true that very poor people can keep themselves clean and neat as easily as you can?

Do you enjoy school more when you have your lessons well learned?

Is it as much fun to clean up a yard or mend a broken latch on Hallow-e'en as it is to soil windows and take gates off their hinges?

Why is it wrong to waste time?

What man or woman do you know whom you would choose for your model?

It is not necessary to place blame so that we may punish someone, but so that error shall not be repeated.

When is it right for a boy to "tell on" the members of the "gang" if they have done something wrong?

A low yield of potatoes makes the price high. Should people plant only a small acreage to potatoes so that they may receive more money per bushel?

Poor workmanship or poor leather makes shoes wear out more quickly. Shall the shoemaker do poor work so that he may sell more shoes?

It is cheaper for the milkman if he is not required to pasteurize milk. But the safety of the citizens' health requires that milk sold should be pasteurized. The milkman is a member of the town council. How shall he vote on an ordinance requiring that all milk sold in the city must be pasteurized?

Tom saw Fred cheating in an examination. After it was over, Tom said to Fred, "You are a good friend of mine, but your cheating in the examination was wrong in four ways." What do you think were the four ways that Tom had in mind?

Henry is trying to decide whether or not he ought to go to college. He is talented, but poor; his father is dead and his mother is not strong. How ought Henry to decide the matter?

A bank cashier takes money from the bank for speculation and loses it. A wealthy friend makes good the loss, so that none of the depositors loses any money. Should the cashier be punished? Did the cashier do wrong? Whom did he wrong?

Two government officers are sent to the Yosemite with a large sum of money. As they drive round a corner in a rough part of the country, two robbers

spring out and yell, "Hands up!" The officers at once obeyed. Did they do right?

Dick and Keran are in the same room at school. Dick got mad at the teacher one day, and that evening when the two boys were going past the schoolhouse, Dick had revenge on the teacher by throwing a snowball through the window in the schoolhouse. Keran saw him do it. The next day the school-teacher asked each boy in the school privately what he knew about it. What should Keran say when she asked him?

Costume Design

Wouldn't it be wonderful to be a famous French dressmaker for a time, hold a few yards of goods up to a model, snip and pin here and there—and lo and behold, a beautiful, graceful costume! Well, we are going to be dressmakers, in a very modest way, but we shall work with cardboard models instead of flesh and blood ones, and with delicately-colored, shimmery tissue and crêpe papers, instead of expensive silks and serges.

We shall make our models first, and shall begin with one boy and one girl. We can lay tissue paper on top of the dolls shown in the panel on the chart, and trace their outlines; then, using those outlines as patterns, we shall cut out similar dolls from stiff paper or bristol board. With paints we can give them as pretty or as interesting faces as we please, and all shades and styles of hair.

Now for our costumes. We must provide ourselves with goods and trimming in the form of tissue paper of various shades, and in checks, stripes or other designs, such as can be found at any kindergarten supply house; we must also have a box of paints and a bottle of paste. Now Jack and Jill shall each be supplied with a neat, pretty school outfit. Jill's shall be a one-piece dress of blue or pink, with collar, cuffs and belt of checked material. We shall cut a piece of paper for her dress as long as from her neck to the skirt bottom, and a little wider than the distance from hand to hand. We lay Jill on this piece, and cut out a dress along the lines of her figure, allowing for an edge or tabs that can be turned over the edges of the doll and pasted on her back, espe-

cially on the shoulders and at the waist. We must see that the sleeves and skirt are a little full, so they will look natural. And now we are ready to trim. We cut out the collar, cuffs and belt from the checked paper, paste them in their places, not too smooth and flat, but with a little crinkle or flare in them. We also give Jill socks and slippers—colored paper for socks to match her dress, and black paper for her slippers. Now she can appear at school or at home.

But winter days are coming, and Jill must have a hat and coat, too. It is very easily done. Again we lay Jill on the right-sized piece of paper, this time a dark, heavy piece, if you choose. We cut around her figure with the correct curves, as shown, adding flaps or edges to paste down. She is to have a fur collar, fur cuffs and a muff, all of which can be cut out of black paper according to the patterns shown. We paste them in place, and give Jill also a pair of high shoes. Then we go into the millinery business, and make a hat for her. It must be big and "floppy," but very simple, the only trimming being a band of ribbon to match her coat. We can put it on her head by cutting a horizontal slit in the crown, just big enough for the top of her head to go through. We may need our paints for the finishing touches, such as the opening line of the coat, a soft outline for the fur, and perhaps the buttons, though they could be cut and pasted, too.

We could give Jill a back to her costumes, and make them removable in this fashion. Folding the paper goods horizontally, we lay her on top of it, her neck at the fold, and cut out a neck that will just slip over her head, but not over her shoulders. Then we cut the dress as before, only this time there will be a front and back part, which must be pasted together only on the shoulders and upper sleeves. Then the dress will slip off over Jill's head, and we can make her a new outfit.

Whichever way we choose to make her costume, with or without backs, we can very easily get a good deal of variety. We can put pleats or tucks or gathers into the dress pattern before we cut the outline; we can use the edges of lace paper doilies for embroideries or laces; and we can add all sorts of pockets, sashes, panels and drapes.

But Jack is still to be fitted out. We use him as we used Jill for a pattern in cutting out his clothes. He must have a pair of knickers and a sailor blouse, with collar, cuffs, and a broad tie applied. His blouse must puff a little, and his trousers must have creases in the legs, so we must cut our goods generously. We can either paint his shoes or paste them on. When he goes to school with the slate in his hand, he will want a sweater and bloomer knickers, a cap and high shoes. There are patterns for all these fascinating additions on the panel on the chart, and a little paste will put them where they belong.

It may seem impossible to make Jack's garments removable, but if we think for a bit, we shall find it can be done. We can paste Jack's waist to his trousers instead of to his body, cut a neck line that will slip over his head, and paste together only the upper sleeve edges and the shoulder lines of the waist. Of course, if Jack demands a high collar, it can't be done. But we can give him a variety of costumes, too; for instance, a baseball costume with bat and glove, also a football outfit or an Indian or cowboy suit. It is so easy to outline these along Jack's body, and then paste on all the trimmings.

Then if we should grow more ambitious, and wish to try more grown-up and fancy costumes, we might make dolls of a more mature age according to these directions. Let us make the pattern of paper first. We fold a piece of paper, 6 inches by 4½ inches, through the center lengthwise, and divide the length with pencil lines into four equal parts, if the

doll is to represent a child from four to eight; into five, for a child from eight to fifteen; and into six or eight parts for an adult. Then we cut out the head within the first part, the waist within the next two, and the skirt and legs to suit the age. We can cut the dolls out folded or free hand, whichever we do best. Then we can dress each in a costume suitable to his or her age, and with all the originality we can manage. When we have dolls in walking costumes, tea gowns, sport suits, evening dresses, etc., with hats and wraps to match, and all done in the latest fashions such as the style books show, we can put on a fashion show for the benefit of our elders, and convince them that we are indeed quite the equals of any French *modiste*.

Sewing

You all remember, I am sure, some picture of a little girl in pantalets sitting at the feet of her full-skirted mother and painfully pushing a needle in and out, in and out, of a long, long seam. It was a picture of home life many years ago. Every little girl of that time had to start in early learning her stitches, for she had a whole lifetime of sewing before her. There were no sewing machines then, for the time was nearly one hundred years ago, and sheets and pillowcases, tablecloths and napkins, towels, curtains, etc., to say nothing of dresses, underwear, fine-pleated or ruffled shirts for the men of the family, maybe even their suits, had to be made by this little girl when she grew to womanhood.

So she began early, and practised every day; she learned every kind of stitch, and then she made a sampler. Perhaps you have one in your house, belonging to a great-great-grandmother. The little girl usually stitched all the letters of the alphabet, the numbers up to ten, maybe the design of a house and tree, her own name and age, and the date—all in the most beautiful stitches she could manage. Then her mother would boast of her to the neighbors, but never in the little girl's hearing; for now little daughter had proved herself diligent and dutiful, a credit to her family.

When the sewing machine was invented and factories began making clothes, little girls stopped making samplers, and some very unwise ones stopped learning to sew. I suppose the poor women were so glad to be rid of long seams that had to be sewed when a good story book or the beautiful out-of-doors was calling them, that they just threw up their hands

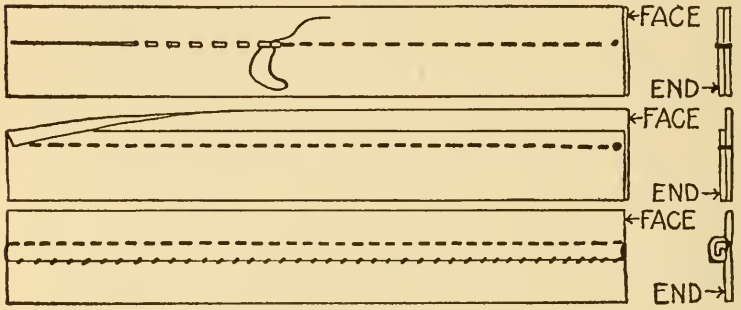
and said, "Never again!" or something similar. But now the women realize that, even with the stores full of ready-made clothes, lots of sewing must be done. We must all mend and darn, if we are going to be neat, attractive persons. And if we are going to have pretty garments out of little money, we must be able to cut, baste, fit, sew and trim them. Now that the tiresome part of sewing has been done away with by the sewing machine, we get real joy from seeing pretty, useful things shape themselves under our hands. There is no joy equal to that of being able to do things, and do them well. There is no slavery like being helpless before such problems of every-day life as cooking our food, making our clothes and taking care of ourselves in every way.

It is because we wish to be independent and to have the joy of "creating," that we are going to learn the stitches and how to use them on clothes and house-linens. Suppose we get some unbleached muslin, a pretty, cheap, cream-colored cotton goods that is used now for everything from sheets and curtains to aprons and dresses. We'll provide ourselves also with some stout thread for basting, some finer white thread for sewing, a medium-sized needle, a thimble and some scissors.

Now let us thread our needles and knot the thread. Do you remember the successful tailor in the fairy tale who always remembered the knot? Then we cut four oblongs, 5 inches by 8 inches, from our muslin, and learn the first stitch shown on the large chart panel, the basting stitch. We fit one oblong over another and baste the two together on one long side. We hold the two pieces in our left hand, the edges to be sewed lying over the left forefinger. We begin at the right, a half-inch below the edge, stick our needle in and out of the goods, spacing the stitches as evenly as possible and push ahead to the left. We may make the stitches long on one side and short on

the other, if we choose; the main thing is to have the basting an even, straight line, for it is meant to be a guide line in sewing. We may now baste the other two oblongs together in the same fashion, and then we shall try the next stitch.

Let us thread our needles with the sewing thread, and knot it. This time we put in running stitches that will stay when we have pulled out the basting threads, or guide line. We make the running stitches exactly the same way as we did the even basting stitches, but we make them a good deal smaller, as



the chart shows, and we fasten our stitching at the end of the seam by sewing two or three stitches over each other. The line of running stitches must be put in just below the line of basting stitches. Now we have the two pieces sewed firmly together, much as the machine would sew them; so we can spread open our pieces, flatten out the seam, and press it. We sew the other two pieces together in just the same way.

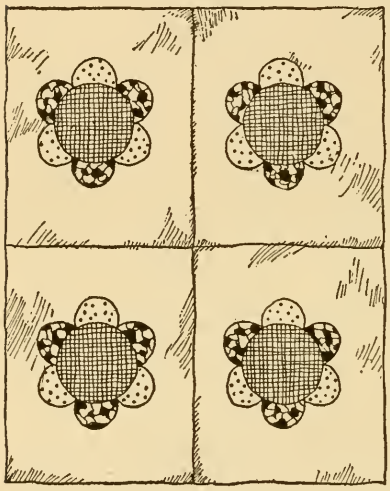
Now the idea strikes us that another seam, joining our two pieces of patch-work will make them into the top of a doll's bed quilt! We'll baste this long seam, of course, but instead of using the running stitch, we will try one that is firmer and much harder to pull out, although it is also much slower. That is

the backstitch. We make one running stitch; then instead of moving the needle forward we move it backward, sticking it into the goods just about where it came out in that first stitch. Then we move the needle forward twice the length of the backstitch, pull it through, and backstitch again. On the side towards us the stitching will look like a continuous line; on the other side there will be two lines. If we decided to practice the half backstitch on the last half of the seam, we would merely backstitch only half-way toward the end of the last running stitch instead of backstitching the whole way. This will make our quilt have a very firm seam in the middle. We shall now use the backstitch after every third or fourth running stitch, when we are sewing seams, for the sake of firmness.

We haven't by any means finished with our running stitch. Now-a-days we use it for outline embroidery. We are going to embroider our quilt top. With a tumbler we will trace a circle in the middle of each patch, and then scallop the circle prettily into a sort of rose design, as shown in the figure. With blue or pink cotton floss or wool yarn, we will outline this easy design in the running stitch. Then we shall have had a good deal of practice in that important stitch, with a pretty quilt top as our reward. There are any number of designs we might outline this way on bibs, towels, aprons, dresses, collars and cuffs. The charts on kites and flowers could give us some fine ideas for designs.

We shall now cut a piece of muslin exactly the size of our quilt top, and a thin layer of cotton batting a quarter-inch smaller all around. We turn in the edge of the quilt top and of the under-piece, put the two together with the cotton in between, baste carefully, and then use a new stitch for sewing the edges of the quilt together. That is the overhand stitch, shown on the chart; it is used always for sew-

ing two edges together on the right side. We hold the edges evenly and firmly before us, between the thumb and forefinger, catch the two thicknesses with small but firm stitches, from back to front, slanting the needle from right to left. We might do it in the colored thread we used for the rose design. All we have to do after that is to "tie" our quilt; that is, to take one stitch with the colored thread quite through the quilt, every few inches down the seams, tying each stitch on top in a nice little knot with ends. And here we have a really useful sampler, with all the important stitches but one.



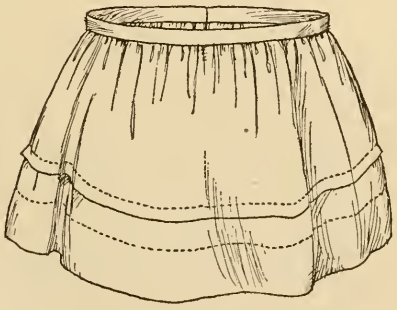
THE BED-QUILT DESIGN

The important stitch is the hemming stitch, which we use in table cloths, napkins, collars, dresses, etc., wherever we have to turn in a raw edge to make one that will not ravel but look finished. An easy method is shown on the chart, and we would better try it on a piece of muslin, which creases easily. We fold the edge over one-fourth inch, then over again a half-inch, crease, and baste. We hold the hem firmly over our left forefinger, and take the first stitch to hide the knot under the hem. We point the needle upward at a slant, bringing it through two or three threads of the material under the fold, then through the edge of the fold. There will be little slant stitches on the seam side, and almost invisible ones on the other. We shall have to practice this stitch around two or three practice squares before we shall do it comfortably.

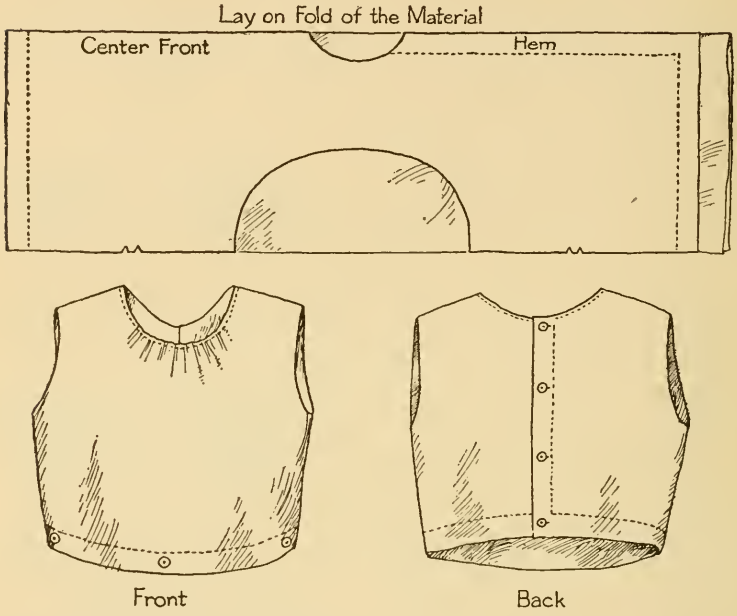
Then we are ready to finish our doll's bedding. We must remember that the sheets must be cut longer and wider than the bed to allow for the hems and for tucking in. There must be an inch hem at the top of the sheet and quarter-inch hems for the other three sides. When we have hemmed two such sheets, we shall probably be able to make much more even and fine stitches than when we started. Here is a case where practice makes perfect.

Having made dolly's bedclothes, we might now start on her clothing. A petticoat is very easily made. We hem the lower edge of a straight piece of goods, the length of dolly from her waist to her dress hem, and wide enough to go twice around her waist. We could also overhand a little lace on the edge of the hem. Then we gather the top of the goods, using a loose running stitch and a double thread, and pushing the cloth back on the thread.

We have on hand a narrow strip of the goods, a little longer than dolly's waist measure. The lower edge of that we fold up a quarter inch and crease. We fit the gathered edge on that fold and then baste; then we turn in the top edge of the waist band a quarter inch, fold the band down so that the turned-in edge rests on top of the gathers and is even with the under side of the band. Then we baste and stitch; now all we need to do is to sew up a back seam in our petticoat, stopping about an inch from the band to allow for the placket. We shall make the simplest placket by just hemming carefully the two raw edges left. The fastening of the petticoat



can be strings or snappers. If the petticoat is too long, or if we wish it trimmed, we can put in tucks with a small running stitch. The easiest way to make tucks equally distant is to measure with a

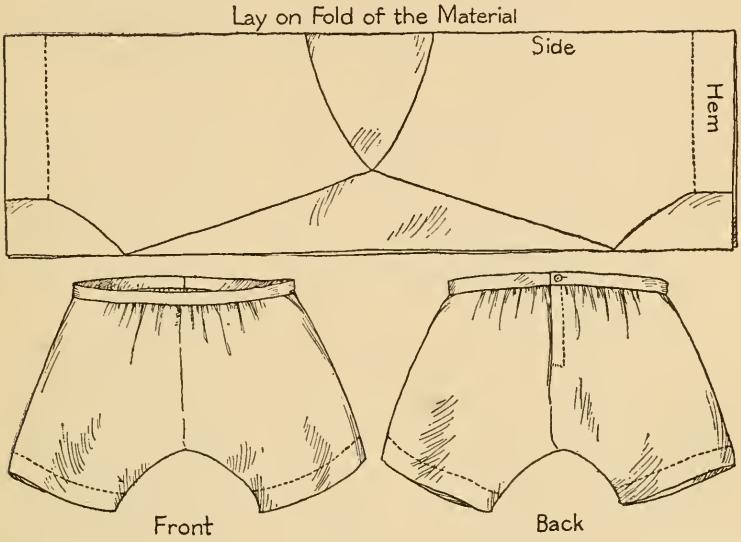


marked cardboard the distance from the edge of one tuck to the edge of the other, crease, baste and sew the right distance from the edge of the tuck.

The two figures show how we can cut out an underwaist for dolly, and some panties. We shall cut some patterns out of paper first. Let us take note that we fold the paper or the goods lengthwise so that we cut the two sides at the same time. There will be no seam in the front of either the waist or the panties, but we shall have to cut through the fold in the center back for the opening in the waist, and for the placket of the panties. We shall have to sew side seams in both garments, hem the neck, the

armholes and the lower part of the waist, sew leg seams and side seams in the panties, hem the legs, gather the top and put on a band.

Now as we are able to do our work a little better,



we are becoming dissatisfied with the raw edges of the seams we make with a simple running stitch. Of course we can overcast them, a coarse form of over-handing, as shown in the figure, but that is really done only on heavy wool or silk goods. We prefer to learn how to make the two neat seams that are called French and felled seams. We use those on all the nice underwear and pretty waists. The French seam is simple and quick; it is really two seams, one inside the other. We sew the first one on the right side of the goods with the running stitch. Then we open the two edges flat, trim and smooth them, turn the seams over, and on the wrong side make a new seam right over the first one. This one we backstitch; the seam shows no raw edges. Neither does the felled seam, which has the added

value of lying flat. It is also a doubly-sewed seam. First we baste the two edges together as for an ordinary seam. Then we cut off the edge of one seam side so that it lies a little below the edge of the other, spread out the goods, turn in the wider edge a little and turn it over the narrow raw edge, baste it and hem it. That, too, is a fine hem for underwear and shirts and waists.

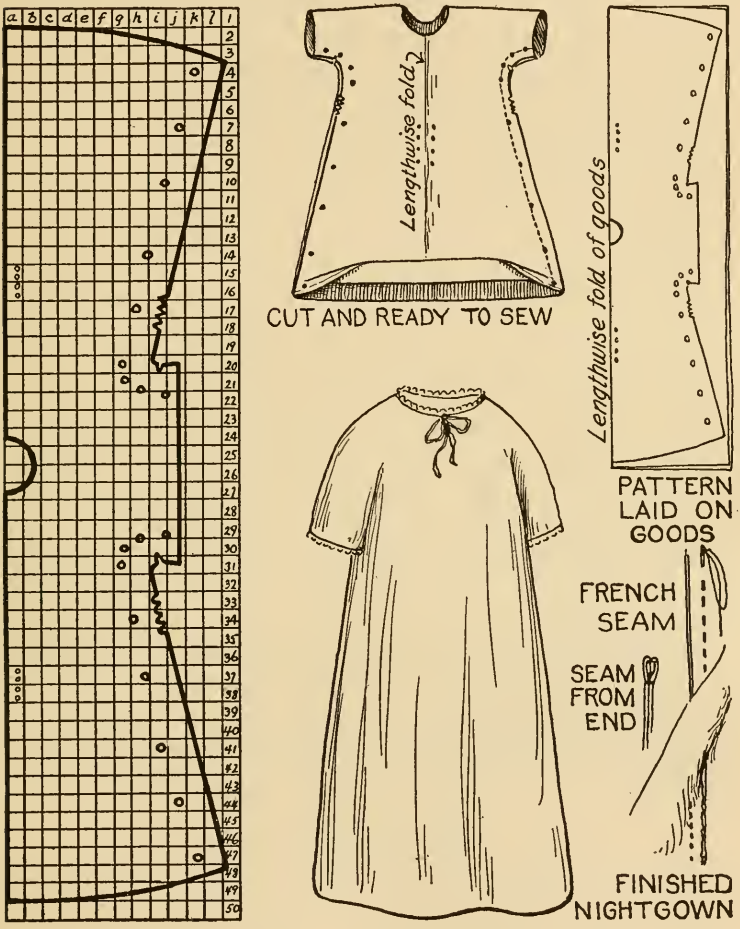
We have also discovered that in order to make neat garments for dolly, we must learn how to make button holes and sew on buttons. Buttons are easy, the chart telling the story. That pin over which we stitch our buttons on, is to make the button sit so high on its twist of thread that the button hole will fit over it without drawing.

Buttonholes are a test of real skill, and must be practised very often. When we have cut the slit for the buttonhole, we either overcast the edges or lay a couple of long stitches below either edge, in order to strengthen them. Then we use the buttonhole stitch, which is as follows: the needle goes in from the back, below the edge and is pulled through; then the thread is thrown in a loop from right to left, the needle being brought over the top of the loop, back of the buttonhole edge, and through. This is continued, and a smooth edge that looks like crochet is formed. We are very fond of this edge for doilies and embroidery of all kinds.

When we have mastered these stitches, there is no end to the clothes we can make and the embroidery we can put on them. We can make pleats instead of gathers in our petticoat-pattern, and have a sport skirt for dolly. If we put some short sleeves in the underwaist it will be a fine guimpe for a sleeveless dress.

The dress itself is so very easy, too. Here is that ever-useful kimona pattern, so delightful to cut and with only two seams to stitch. We can have sleeves

in it, or not; without sleeves it will make an apron or overdress; with sleeves it will make a complete dress. We can cut it off short, without sleeves, for



a chemise; long, with sleeves, for a nightgown. We can cut it up the back for buttons and buttonholes, pleat it, put a belt on it, or trim it with bands, tucks, lace, embroidery, etc., for pretty dresses. Dolly can

have a full trunkful of clothes in a very short time now.

There is only one more very necessary lesson—that on darning stockings. It is an art to darn well, for it is much like weaving and lace-making. We'll try a hole on baby's stocking first—a small hole. We'll use a darner, too, spreading the hole smoothly on its surface. Armed with a needle threaded with darning cotton or wool, but not knotted, we begin operations. We lay long stitches, not just from edge to edge of the hole, but from edge to edge of the worn spot. Now we have a lot of stitches from top to bottom, and must begin working from side to side. This time we weave; that is, the needle goes under one stitch, over the next, under the third, over the fourth, etc., until it reaches the outer edge of the worn spot. As it returns, it goes over, under, over, under, just as on its first trip; but now it goes under the one it went over, and over the one it went under. It is just like the weaving we do in school, and if we are careful we can do a good job even from the first. Then think how we can help mother and have a cozy time, too, darning stockings while chatting with those around us.

Now that we can make everything from sheets to dresses for dolly, and keep her and ourselves mended and darned, we shall expect mother to go and tell the neighbors what skilful, clever daughters she has!

The Cat Family

The three little kittens in the pan of the scale, shown in the large picture on the chart, are so attractive looking that we want to cuddle them. No baby animal is more appealing than is the soft ball of fur with pleading eyes and playful ways that we call a kitten.

We like to watch a kitten play; it mews so plaintively when it wants to be fed, and purrs so contentedly and thankfully when we give it a saucer of milk.

Don't you like to stroke pussy's soft fur and listen to its purr? Don't you think a cat lying before a fire makes a room look homelike?

One would never think that these playful, friendly kittens are related to all the fierce, cruel animals shown on the chart panel. But the soft paws conceal sharp claws, which even the youngest kitten knows how to use. All the animals pictured are members of the Cat family, because of their structure and like traits of character. All cats are flesh-eaters. After all, it is no more strange that our kitten should be related to the lion and the tiger than it is that our faithful dog is descended from cruel wolves. Someone called the kitten—

> "Little lion, small and dainty sweet,
> With sea-gray eyes and softly stepping feet."

CATS AS HUNTERS. What do you know about cats. You probably have been told that their eyes are made so that they can see at night. Did you ever see a cat's eyes at night? How did they look? Like two balls of fire? Did they frighten you? Did you ever look closely at a cat's eyes at noontime on

a bright day? What shape was the pupil? Was it longest up and down, or sideways? Is it different at different times of the day? Why? Do all members of the Cat family have night-seeing eyes? What other animals do? Are they animals that the cats hunt? When do cats hunt?

How does the cat walk? Can you make a picture of the way her tracks look? Can she run fast? Can she climb? Can she swim? These are questions which we might answer here, but you will enjoy watching some of the cats of your neighborhood and learning the answers for yourself.

What does the cat hunt? Young rabbits? Little chickens? Birds? Is the cat a good animal or a bad animal? Are any of us all good or all bad? Perhaps the cat is like the rest of us. All members of the Cat family eat other animals for food; but so do other flesh-eating animals. So do we. Possibly it is no more cruel for the cat to seek birds for food than it is for a dog to hunt for rabbits or for us to kill a chicken for dinner. But we do not want the birds killed. We shall learn later if there is any way of protecting them.

CAT HISTORY. Cats have lived with people thousands of years. Carvings made more than three thousand years ago on Egyptian buildings show that people of that time kept as pets three kinds of animals—monkeys, dogs and cats. The monkeys were amusing, the dogs were useful; the cats were both amusing and useful.

Egypt was called the "granary of the world," because its people produced most of the grain grown at that time. There were no tight, well-built warehouses or elevators in which to store the grain, and cats were needed to keep rats and mice from eating it.

On a tomb at Thebes (can you find Thebes on a map of Africa?) is a piece of sculpture which shows an Egyptian hunting game in the marshes. In the

boat with him are the whole family, their servants and their animals. The cat is standing beside its master, "pointing" as pointer dogs do, to show where the game is. The master has in his hand a *schbot,* which was like the Australian boomerang, which he is about to throw at the game, probably a duck. It was the cat's business to go into the water and bring back the game.

Would our cats do that? No. They do sometimes dip a paw into water and catch small fish; it is not safe to leave the gold-fish bowl where the cat can reach it. But cats dislike very much to have water touch them. They raise as much objection to being washed as some children do! The Egyptian cat may have been more like the cheeta than like our house cat.

On another tomb is a picture of an ancient king with his cat at his feet. This cat wears gold earrings and an elaborate collar. One of the ancient goddesses is pictured as having a cat's head.

Partly because cats were not common, and people wanted more of them to catch mice; partly, perhaps, because cats do have a very appealing way about them, the Egyptian cats were sacred animals. People were not allowed to kill them. In case of fire, great efforts were made to save the cats. When a cat died, the members of the household shaved their eyebrows and went into mourning. Favorite cats were embalmed, the faces were painted and the bodies were wrapped in plaited straw and buried with great ceremony. Thousands of cat mummies have been dug up.

Because the size of the pupil of the cat's eye changes as the sun rises and sets, it was used as a symbol of the sun. It is believed the word *cat* comes from a word which meant *seeing.* The cat meant the sun; the sun meant light and liberty and justice; so the cat's image was used on the shields of many

old families and on the royal banners of Persia and Korea.

Because the cat goes about at night, she was also the emblem of the moon. In one story, the moon is represented as a cat devouring the gray mice of twilight.

Cats never store food as dogs do from the habit of centuries, because they have always had food given to them. In some European countries the custom of feeding and caring for cats at the city's expense has existed since the days when cats were befriended so that they might keep away rodents.

CAT STORIES. Do you know the story of "Puss In Boots?" And Dick Whittington and his cat? Can you say the rhyme about the "Three Little Kittens?" Also "I Love My Dear Puss," and "Went to London to See the Queen," and the one about the cat that burnt her petticoat? Do you know other rhymes about cats or kittens?

There are stories of cats wakening people in burning buildings; of how they will go through fire or water, and fight furiously to save their young; stories of how readily they distinguish the footsteps of people whom they like; stories of how they wait at a certain hour for someone of whom they are fond who usually comes at that time; and innumerable stories of the ease and swiftness with which they find their way back home, even when they have been carried long distances in a closed sack after night. Some of these incidents are probably true. Many of them are merely good stories, without any foundation in fact. Cats' quickness, the ease with which they work their way out of a tight grasp, their faculty for always lighting on their feet and the quickness with which they may disappear from sight account for the old and foolish idea that they have nine lives.

CAT LEGENDS. There are many legends about cats. According to a story of the Arabs, which you

need not believe, there were no cats when the family of Noah went into the Ark. But the people were afraid the mice would ruin their clothing and eat their provisions. So Noah passed his hand three times over the head of the lioness, she sneezed, and a cat ran out of her nostrils! The appearance of the cat so frightened the mice that they hid, and they have been hiding from Puss ever since. You may be interested to know that in some pictures of the animals coming out of the Ark, the cat is walking proudly at the very head of the procession. Evidently she began early to let folks know that she thinks she is a person of consequence.

Another legend relates to a monk shut in a cell. Satan sent hundreds of mice to annoy the poor man. Out of the monk's sleeve sprang a furry animal that devoured all the mice but two. These two escaped by hiding in crevices in the wall, and ever since *all* cats watch at *all* holes to catch the two mice which got away.

A Russian fable says that when the animals were made, the dog was left without either fur or hair. The fur which was to have been the dog's was given to the cat, and dogs had to be content with coarse hair. From this story we get the idea that dogs think that cats have their property, which is the reason that *all* dogs chase *all* cats.

A fable told in many countries about many different bridges is of a man who undertook to build a bridge over a difficult chasm. He could not get the last span in place, and asked Satan to help him. The devil promised to do so, if he could have the first soul which crossed the bridge. The man agreed. When the bridge was done he sent a cat across. It sprang at the devil and clawed him so fiercely that he let it go. All these stories illustrate traits of the cat,

CAT CHARACTER. Someone says that cats in many ways resemble well-bred people. They are quiet, well-behaved and they are affectionate. They like to be neat and clean. Notice how carefully they wash themselves, licking and smoothing themselves all over with a tongue which has been likened to a currycomb. How do they wash the top of the head?

They like to be noticed. One ancient writer says that when the "beaste" has a fresh, new coat, it "goethe faste aboute to be seene." Notice how the cat rubs against us or climbs into the lap to be fondled. Dickens' cat, Williamina, used to sit on the table as he wrote. When it grew tired, according to the story, it would put out the candles with its paw, so he would quit work and pay attention to it.

Dogs like to travel to new places; cats like to stretch themselves before an open fire at home and blink and dream. Do you suppose they dream of the days when their ancestors hunted in a world that was new? Sometimes they look as though they were thinking on deep subjects; sometimes they look as though they did not quite approve of us and the things which appear of little consequence with which we busy ourselves.

Swinburne, an English poet, wrote of the cat:

> Wild on woodland ways, your sires
> Flashed like fire.
> Fair as flame, and fierce and fleet
> As with wings, on wingless feet,
> Shone and sprang your mother free,
> Bright and brave as wind or sea.

Cats like to feel independent. They want to be free to come and go as fancy dictates. They are never our servants, as are dogs and horses. They are our friends and companions.

It is probable that cats' habit of playing with mice—letting them go and then pouncing upon them

—is their way of practice in perfecting themselves in the art of catching live animals; it is the way young kittens are taught to catch and kill. Cats run and spring up trees and scratch at the bark to stretch the muscles of the feet and legs. Except when protected and fed by man, the cat's safety and food depend on its ability to surprise, catch and kill its prey.

CATS ON GUARD DUTY. Frederick the Great used to require captured towns to furnish a certain number of cats to help guard the stores for the army.

Cats are still made use of in the war against mice and rats, especially where paper is stored. The National Printing Office of France sets aside a sum of money to provide meals for a large staff of cats and wages for their caretaker.

The Midland Railway Company of England and the London dockyards are said to use many cats to protect the grainsacks. Even a tiny hole gnawed in a sack will cause the loss of much grain. You may remember that during the World War vast quantities of wheat stored in sacks in Australia were destroyed by rats and mice.

Foundries mix flour with the sand used to make casts, and in some countries cats are still kept in such places to kill or frighten away the mice. These cats must be taught not to walk on the moulds, or scratch or injure them. Newspaper offices, fire and police stations usually keep cats to rid the buildings of rats and mice.

The use of cats as mousers is a relic of early days. Traps will dispose of many more mice than can a great many cats.

CATS OR BIRDS. Cats which catch mice also catch birds. It is estimated that in the United States cats kill as many as 35,000,000 birds a year. Birds are valuable as destroyers of worms and bugs, which without this check would ruin vegetation.

Those of us who love our cats wish to keep them,

but we should not keep them unless we make an effort to protect the birds in some way. If we put a bell on the cat, the birds can hear her coming. In placing birdhouses we can see that they are where cats cannot get to them to kill the little birds before they are old enough to fly.

CATS AND DISEASE. Cats are subject to many diseases, especially of the breathing organs, similar to the diseases of people. We cannot keep cats in the house all the time. When they run out, we do not know what filthy, dirty, diseased places they visit. A cat which carries disease and vermin is not a fit playmate for boys and girls. We should watch and plan carefully and get information from those who know much about cat habits before we expose ourselves to such dangers.

CARE OF CATS. Cats should be allowed to run out of doors. They need fresh air. They like to roll in a grass-plot or on gravel, and to climb and play freely. For feed, they need milk, grass, fresh vegetables and meat. Cats are especially fond of catnip, asparagus, cabbage, fish and raw liver. They need water to drink, and a comfortable place in which to sleep.

If we keep cats, we must not turn them outdoors to shift for themselves at night or when we go on a vacation. They get into mischief, annoy the neighbors and acquire thieving habits. They are at the mercy of dogs and cruel boys. Homeless, suffering, starved cats have a furtive, scared look. They are hunted and tormented until they are always ready to run; it is no wonder that in ancient times such cats were suspected of being in league with the Evil One.

BREEDS OF CATS. All domestic cats are divided into two general classes, and these are called Persian, or long-haired, and English, or short-haired. Each class contains cats which are black, white, bluish,

smoke, and silver colored, and tabbies, or tortoise-shell, or tiger cats.

Angora cats are Persians. Siamese cats are descended from cats originally kept in the royal palace at Siam. Abyssinian, or bunny, cats are supposed to be descended from the original Egyptian cats. Many cats, from the Isle of Man, are tailless, or have only short stumps of tails. Someone has explained this by saying that the people who inhabit the Isle of Man are Celts. The ancient Celts believed that if you stepped on a cat's tail, a serpent would run out from it. They did not wish to have anything to do with snakes, so they bred cats from those born without tails. The Japanese cut off the tails of their cats, as people here cut off the tails of some dogs.

Tabby means *striped,* but the name is often used to refer to any cat. In America, short-haired blue cats are often called *Maltese. Grimalkin,* probably from *gray* and *malkin,* originally meant an old cat, but later came to mean a sort of witch cat. *Puss* comes from a word which means *little.*

THE CAT'S COUSINS

Some of the fiercest and most dangerous animals are cats. Let us look at these wild cousins of our housecat and see what they are like. Have you seen any of them with a circus or at the zoo?

In America we have, in the order of their size, the jaguar, puma, Canada lynx, red lynx or wild cat, and the ocelot.

The jaguar is found only in Mexico and South America. It is about seven feet long, is handsome, powerful and dangerous, and is the fiercest of the cats that live in either of the Americas.

The puma, mountain lion, or cougar, is found in the Rocky Mountain States and south to Patagonia. W. T. Hornaday, the great naturalist, says

that it is not so dangerous as a savage dog. It has a terrifying scream, but runs away if it is possible to escape danger. It is the best climber among the large cats, but is rather small, for it is only about forty inches in length in the body.

All lynxes are short-tailed, with heavy fur, are good tree-climbers, and are thirty to forty inches in length. The porcupine is the only small animal that they can not catch and kill. But they are said to be "no more dangerous to man than rabbits are. They never fight unless cornered." They were formerly found in all parts of North America. The Canada lynx has a long pencil of stiff black hair standing up from the tip of the ears. It is a good climber and swims well, but runs poorly. The red lynx is called the red or bay lynx, wild cat, or bob cat, according to the part of the country in which it lives. In the west it is spotted with black spots, as you see in the picture on the large panel. It has a fine-looking face, resembling that of a tame cat. It is found wherever there are large forests in the West and in the Atlantic states. It is not found in South America.

The ocelot, or tiger, cat appears to be a small leopard. It is the only cat on which the stripes run lengthwise of the body. The naturalist says that "like most small yellow cats, it is ill-tempered." It is found in Southern Texas and south through Mexico and South America, and is from thirty to thirty-six inches in length.

The lion, tiger, leopard and cheeta are found only in Asia and Africa.

The lion is the largest and most majestic of the cats. The male lion is the only cat which has a mane, and no other cat has a brush on the end of the tail. The lion cannot climb a tree as other cats can. For short distances, it can trot or gallop as fast as a horse. It is so strong it can kill a man with

one blow of the paw, it can drag the body of an ox. It kills only when hungry or when attacked.

Tigers are the most treacherous members of the Cat family; it is not possible to tame them so they can be trusted for a single moment. They are found only in Asia, although there are fossil remains in the United States, which means that thousands of years ago there were tigers in this country. Large tigers may be as large as a lion, and almost as strong. They are not naturally climbers, but they swim well.

Leopards were once supposed to be a cross between lions and panthers. Panthers are large leopards, usually dark colored. They are more easily aroused, more stealthy, and more dangerous than tigers.

Do you know Kipling's story, "How the Leopard Got His Spots"? If it is in the library, I am sure you will enjoy reading it.

Cheetas, or hunting leopards, are trained to hunt antelope and other small game. Their short claws do not draw in as do those of other cats. When trained, they are very docile, and "as fond of notice as a house cat."

Some of these large, wild and dangerous members of the Cat family are seen in circuses in an apparently tame state. They are taught to perform tricks and to obey the orders of their masters. However, they must be watched every minute while out of their cages; they can never be domesticated, like the family cat, but always remain treacherous.

The Dog Family

A well-known play, called *The Bluebird,* tells about a small boy and his sister who go in search of the bluebird, "Happiness." The fairy Light guides them, and they take with them in their search many companions, such as the Dog, the Cat, Sugar, Milk, Bread, etc. Into the Kingdom of the Past, where the dead live, they travel first; then into the Kingdom of the Present, and lastly into the Kingdom of the Future. Dreadful things happen; they must visit graveyards, alone and at midnight; they must search through the Domain of Night, where the Terrors dwell—Sicknesses, Evils, War and other Monsters. When they search through a huge black wood, all the Trees and all the Animals, led by the treacherous Cat, hold a conference and plan to kill these human beings, whom they hate so much because Man rules over them.

Throughout all these adventures, is it greedy Bread, or flattering Sugar, or cowardly Milk, or the sly Cat, who aids and comforts and stands by man? No. The only one out of the whole world of nature that is loyal always, devoted always, loving always, is the Dog. He fights for the children, saves them, and brings them back home again to the bluebird, who, after all, lives in their own little cottage.

This is a very fanciful story, but it tells a big scientific and historical truth; namely, that since the world began, the dog, out of the whole world of nature, has been man's first and most faithful friend. We have proof of his faithfulness and love every day; but for proof of the fact that he was our first animal friend, we must go to the scientist and the historian. They tell us that when they dig up, as

they are always doing, the homes of cave men who lived many thousands of years ago, they find along with the queer stone knives and other tools, side by side with the skeletons of the men themselves, the skeletons of dogs. Furthermore, they have found carved on the rocks along the Baltic Sea, in the north of Europe, and also on rocks in Assyria, in Western Asia, pictures of men clad only in skins, hunting with several large dogs that look like mastiffs or wolf-dogs. You must remember that that was long before man had tamed and made use of any other animals, such as horses, cows, pigs, sheep, chickens, etc.

Of course, like all other animals, the dog was wild once. There is no question but that he is a true descendant of the wolf and some cousins of the wolf, like the jackal, the coyote and perhaps the dingo, who is an Australian wild dog. If you look at the pictures of these wild animals on your chart, you will see how much they resemble some dogs.

When you think of the poodle, the pug, the bull-dog, or the spaniel, you wonder how they can possibly have wolf ancestors. They have, however, and scientists can prove it from much more important evidence than mere looks. Every dog, whether he be a Newfoundland weighing almost 300 pounds or a Chihuahua Mexican dog weighing a pound and a half, shows decided traces of his ancestry in his instincts and habits.

Do you know why a dog turns around and around before lying down? It is because his wolf ancestor had to trample down the brush of his bed to make it smooth and to scare out the snakes and centipedes. Do you know why a dog bolts his food in spite of the fact that he has forty-two teeth, ten more than you have? It is because, when he hunted in packs like the wolves, and ran down his prey, he had to bolt his food quickly in order to get another mouthful before the rest of the pack had eaten it all. Do you

know why he buries a bone he is not hungry for? Because food used to be very scarce in his ancestral days, and the wolf-dog learned to save for a starvation period.

Do you know why puppies in their play always worry each other's fore-legs? Because when their wild ancestors used to fight, they tried to disable each other by crippling the fore-legs, since those legs were of most value to them in side-stepping the enemy's attack on the throat, the most easily wounded part of the dog and therefore the first spot aimed at in a fight. Do you know why a dog howl is always answered by howls from all the other dogs in the neighborhood? Because that's the way the wolf called the pack together before they started on the hunt. And do you know why he howls especially on moonlight nights? That's because his wild ancestors used to find moonlight nights especially good for hunting purposes. And so on; perhaps you can think of other dog traits that can be explained when you remember that the dog's great-grandfathers, several times removed, lived in the woods and hunted for their food with the rest of the pack.

Perhaps you would like to know how it is that all these hundreds of varieties of dogs have come from the wolf-like ancestor. What you must remember is that through the thousands and thousands of years that the dog has been following man around, he has adapted himself to every change in man's life and condition and has developed the qualities that his masters most needed. He was always swift and intelligent, possessed of the keenest nose and the sharpest hearing. Man first needed dogs for hunting purposes, so these traits were especially developed and there resulted the wonderful hunting dogs of all types.

First came the hound; elk hounds, greyhounds, other hounds, deer hounds, bloodhounds and fox-

hounds. The names of most of them tell you what animals they were trained to hunt. All of them are built for speed, like a racing automobile; they must be swifter than the swiftest wild animals in the forest, and they are. The best example is the greyhound, which hunted the swift deer. Look at the picture on the panel and note the long, slim, curved body, the narrow, pointed head, the smooth, satiny coat, the long, slender legs, every characteristic helping him to cut through the air like a flash. He looks as if he were made of whip cord, not of flesh and blood.

Not all the hounds are smooth-coated, but all except the bloodhound and the otter hound show the slender, gracefully curved body and the legs like steel springs. As the otter hound hunts in water, he is built more for swimming and nosing into river bottoms. He looks something like an Airedale, and probably is a distant grandfather of that water-loving dog. The bloodhound has a huge, wrinkled head, with flapping ears, and instead of being the terrible creature you think of in *Uncle Tom's Cabin,* he is a most gentle, melancholy looking animal. But he can follow a trail hours after it has been made, and he is a terror to criminals who think to hide themselves in woods and swamps.

One of the famous hounds in stories was an Irish wolf hound called Gellert. He belonged to a Welsh prince, who liked him best of all his hunting dogs. One day Gellert was missing from the hunt, much to the disgust of the Prince. When the Prince, whose name was Llewellyn, returned, the dog met him with his jaws all bloody. The Prince, very much alarmed, rushed to the room where his baby son slept. It was all upset, the cradle upside down, and the baby nowhere to be seen. Immediately the Prince jumped to the conclusion that Gellert had killed his son. He stabbed the dog to the heart. Then he heard a cry from under the cradle, and there he found his son,

unharmed, while beside him lay a dead wolf. Gellert had saved the child. The Prince was so overcome with grief for his hasty act that he raised a tomb to the faithful hound. Now a whole village in Wales is called Beth Gellert, in memory of that dog.

There are other hunting dogs besides hounds, however—those that are trained to "point" out a covey of birds and to "retrieve" the wounded or dead birds, that is, to fetch them out of water or swamps and bring them to their masters. Now you can see how they got their names—pointers, retrievers, etc. They are all small dogs, very honest, faithful and intelligent. Think how keen their sense of smell must be to track the birds, how quiet they must be to go after them without startling the wild creatures, and how well-trained they are to wait quietly for their master to shoot, when their natural instinct must be to jump at their prey and kill it. That is the marvel about all hunting dogs, that they can be trained to go against their natural instincts.

Another interesting hunting dog is the affectionate, excitable, joyous little terrier, in all his varieties —Boston, Irish, Scotch, Welsh, fox, etc. The name *terrier* comes from the Latin word meaning *earth,* for this little dog was once used to hunt animals that burrow in the earth, like rats, foxes and badgers. You will note the habit all terriers have of sniffing the ground. We think of them now chiefly as the best little "pals" in the world, entertaining, loyal and courageous. A good story is told about an Irish terrier in a lion hunt. The lion would not stir from his lair, no matter what the hunters did. All of a sudden he roared and jumped out into view of the hunters. No wonder; his tail stood out straight behind him, and attached to the end of it was the small Irish terrier with his teeth locked.

That sounds as if it might be told of the Airedale, too, who is the "scrappiest" and perhaps the most in-

telligent of the terriers. He is not a pure terrier, but has otter hound blood in him, just as other terriers have bulldog blood in them. The Airedale never avoids a fight, and some people say he is bad-tempered. No one questions his intelligence; he was one of the types used in the recent war for all sorts of purposes that we'll tell about later. He's very popular, too, at present, and quite expensive, since he is a show dog with pedigrees and all sorts of "points" to be looked after. You no doubt consider him very homely, and so he is; but as with the bulldog, the homelier the better, according to dog standards.

By and by man discovered that he could use the dog for other purposes than hunting. He needed the dog's courage, affection and loyalty for his home and his family. Thus was developed the house dog, who must be big and strong, patient with the family but able to fight fiercely with an enemy. Very likely the big mastiffs, or dogs like the Great Dane, a mixture of the mastiff and the hound, filled this need at first. They were huge, heavy animals, bigger than men, with a somber and fierce look in their eyes that scared intruders. They had a habit of barring the way, silently, but steadily, and of springing at the throats of any who were bold enough to challenge them. Many stories are told of their courage and devotion. One of them watched over his master all night, when he lay wounded on a battlefield. Another saved his master's life by springing at the servant who had come to kill him. The story is also told of a burglar who tried to climb into a house which was guarded by a mastiff. The next morning the burglar was found outside the window, choked to death.

While we still use mastiffs to guard property, we feel safer nowadays in entrusting children and human beings to huge dogs of another breed, namely

the Newfoundlands and the Saint Bernards. They are both splendid dogs of magnificent proportions and better able to endure cold and deep snow than any other dogs in the world. They have so gentle an expression in their eyes and are so patient that children lose their fear of them at once. They are the best of protectors, for they are strong and good-tempered. The Newfoundland has saved many a person from drowning, and it is too bad that his size makes city people feel that he is too expensive and too awkward to keep. He is such a real American dog, as you can tell from his name, with such fine traits that we should encourage his use.

The St. Bernard is a Swiss dog, and also very famous as a life-saver, especially in the Alps. There the monks keep him to save travelers who get lost in the deep snows. These wonderful dogs carry food and drink strapped on their backs. When they have found a lost man, who is probably starved and numb with cold, they not only bring him food to revive him, but they bring him their broad backs on which he can ride to the monk's home and be safe. One very famous St. Bernard, called Barry, saved forty men in this way. Alas! when he found the forty-first, the man thought he was a wolf, and shot him.

Another splendid helper was given to us in the sheep dog, who developed when man began to keep large herds of sheep. There are Belgian, English and German shepherd dogs. But the one we know best and admire most, because he is both wise and handsome, is the Scotch Collie. He has become a great favorite, and is a show-dog now. But in the sheep countries he is really a worker of the best sort. The way he can drive a herd of 3,000 sheep home at night from the steep mountains, separate them, and pen them up for the night, is a sight that makes a human being take off his hat to the dog. He does

the work better than could six men. In the sheep neighborhoods there are often contests between these dogs to see which can bring home the sheep in the best manner. The dog which wins the silver cup becomes very famous. You may read about a most wonderful shepherd dog in Ollivant's *Bob, Son of Battle.* These same shepherd dogs—especially the Belgian and the German, which are also trained to help the police track criminals—were used very much in the war, as we shall see later.

Another one of the working dogs is the type of dog that pulls loads. You often read of Belgian dogs pulling the milk-cart on the early morning rounds, and of taking his master comfortably to town. I suppose you have seen the Newfoundland or the St. Bernard used in the same way, only the master that sat in the cart was usually a small boy. The best example of such a puller is the Alaskan, or Eskimo, sledge dog. He takes the place of the horse, the automobile and the railroad in Northern Canada and Alaska. If we ever take trips to the very far North we shall have to sit behind a half dozen or more of trained Eskimo sledge dogs, who will whirl us over the frozen snow in record time, who will stand the intense cold gallantly and travel over snow crusts that would break under any other animal. Do you wonder that a dweller in that cold North takes care of his sledge dogs as if they were his children, and mourns the loss of one as almost his worst calamity? The story is told that a United States officer once found a man traveling across frozen wastes with six small puppies in his arms. He was half starved and snow-blind, but the puppies were snug and warm.

So far we have told you of the dog types that developed naturally out of the work that man demanded of them. There are also some freak types that you might almost say are man-made, for man changes their looks; he shapes their noses, jaws, ears, tails,

etc., to suit himself, sometimes in ways that hurt very badly. In the beginning the bulldog never looked as he does now. He was a strong animal, with the particular gift of hanging on to whatever he got hold of, and gamely fighting to the end. He never knew when he was beaten. He got his name from the fact that he was used for baiting bulls, in a public sport. That is, he was shown a bull in a public square and taught to get a good grip on the bull's nose and hang on. He would hang on while the bull snorted around trying to toss him with his horns. Sometimes the bull succeeded, too, and altogether it was a nasty, bloody sport that should have been done away with a long time before it was, in 1853. It was this sport which started dog-trainers flattening the noses of bulldogs, and making the under jaw project, so they could get a better hold of the bull's nose. Now the bulldog's poor flat nose is hard to breathe through; his teeth do not meet well enough for him to chew his food well; his legs are too bowed for swift running, so that almost all that is left of the strong, active dog is his splendid courage and his good-natured smile.

The French bulldog that you see pictured is much smaller than the English, and is probably a development of the Spanish bulldog, which was used just as was the English one. Now he is used chiefly as a pet dog, many people liking his little flat face and upstanding ears, the only features that are different from the typical bulldog. He is a very nice little dog, but it seems too bad that man should spoil his looks, just because he has notions of what a bulldog must look like to be fashionable and win prizes at shows.

In the recent war, it didn't much matter what kind of dogs were employed, so long as they were intelligent. All types of dogs were sent to the army, for war work, and many of them came home with service stripes and decorations, like the men. There

were about 10,000 dogs in all—Alaskan, St. Bernards, Collies, terriers, and so on. They went into the trenches with the soldiers, cleared those dirty places of rats, helped their masters, and went over the top with them. There is no record that they ever sneaked off. Then they were used as sentries, to give warning of the enemy—not by barking, mind you, but by wig-wagging their tails or in some other quiet fashion. They could smell the enemy long before the soldiers could ever know danger was near. They carried important messages over shell-torn ground, where no one else could go. They could slip along without being noticed far better than could a human being. Oftentimes a dog belonged to an officer to whom important orders must go. He would creep over a battlefield, paying no attention to the terrible shells and bullets, but sure to find his master, if he didn't get hit first. Wounds this army dog didn't mind: Nellie, a fox terrier, was wounded twice, but got to her master in a big battle. A French setter stayed in a shell hole by his master three days and nights, until they were found. Follette, a French dog, went a mile through the firing line to her goal, even though she died of her wounds later.

Another big work the war dogs did was for the Red Cross. The trained St. Bernards were good for rescue work on the battle fields, but many other types were used, too. They could tell a dead soldier from one who was wounded, and they could track a person into all sorts of queer places. They usually carried food and bandages strapped to their backs. When the wounded man had helped himself, the dog would take his helmet or something belonging to the soldier back to the Red Cross men, whom he would direct back to where the sick man lay. Think how many lives we owe to these dogs.

The Eskimo dogs proved a big help in bringing up food or provisions through the snow in the moun-

tains. Once in the French Alps when a troop needed ammunition badly and no messenger could get through, because of a bad blizzard, an officer hitched up twenty-eight sledge dogs, who returned next day with their fourteen sleds well loaded with powder and shot. So they saved the day for the French, and received war crosses for themselves.

There are so many stories of clever dogs—dogs who act, dogs who have traveled all over the world, on trains and in aeroplanes, dogs of queer tastes, and dogs of famous kings and generals, that we could write books about them. But you can see how dogs act, on the stage and in moving pictures, for yourself. You can tell stories of your own dogs that show how intelligent they are. And you all have proof of their love.

What does a dog ask in return for such gifts to man? Love from his master, and a little care. He doesn't care for the rich food, the cushioned bed, the fancy sweaters and blankets, the lazy life that the wealthy give to their dogs. He gets unhealthy and cross from such coddling. He wants one good, plain meal a day, a clean, bare place in which to sleep, and plenty of exercise. Then he will be healthy and good-natured. If you want him to sit up, shake hands, say "How do you do" in dog language, fetch you things, etc., you can easily teach him to do so by being patient and kind when you work with him, and by making him obey you. You must take time, and you must not let him disobey. He soon learns, and repays you for your work and patience by being a devoted friend and a real helper.

A great United States Senator (Vest, of Missouri), one of the most eloquent of Americans, did not think it beneath his dignity on a certain occasion when a lawsuit resulted from the death of a dog, to pay the following tribute to all dogs, everywhere, in his address to the jury:

Gentlemen of the Jury: The best friend a man has in this world may turn against him and become his enemy. His son or his daughter, that he has reared with loving care, may prove ungrateful. Those who are nearest and dearest to us, those whom we trust with our happiness and our good name, may become traitors to their faith. The money that a man has he may lose. It flies away from him, perhaps when he needs it most. A man's reputation may be sacrificed in a moment of ill-considered action. The people who are prone to fall on their knees to do us honor when success is with us may be the first to throw stones of malice when failure settles its cloud upon our heads. The only absolutely unselfish friend that man can have in this selfish world, the one that never deserts him, the one that never proves ungrateful or treacherous, is his dog. Gentlemen of the jury, a man's dog stands by him in prosperity and in poverty, in health and in sickness. He will sleep on the cold ground, where the wintry winds blow and the snow drives fiercely, if only he may be near his master's side. He will kiss the hand that has no food to offer, he will lick the wounds and sores that come in encounter with the roughness of the world. He guards the sleep of his pauper master as if he were a prince. When all other friends desert, he remains. When riches take wings and reputation falls to pieces, he is as constant in his love as the sun in its journey through the heavens. If fortune drives the master forth an outcast in the world, friendless and homeless, the faithful dog asks no higher privilege than that of accompanying him to guard against danger, to fight against his enemies. And, when the last scene of all comes, and death takes the master in its embrace, and his body is laid away in the cold ground, no matter if all other friends pursue their way, there by his graveside will the noble dog be found, his head between his paws, his eyes sad but open in alert watchfulness, faithful and true even to death.

My Country

You cannot think seriously of your country and of what it means to you without a peculiar sense of pleasure and a proud feeling of security and of personal possession. The ideas may not come to you in these words, but they are a part of your being if you thrill with gladness when you think of the land of your birth. These are *patriotic* feelings, which link you with strong but invisible chains to your country.

When you feel that you are protected in the right to live in comfort; that all proper liberty is guaranteed to you, that under the beautiful skies of your native land is a power, unseen but real, to right your wrongs and be your champion; when you recognize that you yourself, when you grow up, are to be a part of this wonderful scheme of things as a citizen, and when you feel that you ought to do all you can in return for your great privileges, then you are *patriotic.* You, yourself, are a little, weak atom in the great mass of people round about, but how strong you may feel when you realize you are a part of this powerful country that you believe to be the finest in the world!

No person can force you to be patriotic; if you lack a sense of gratitude for those things which make you glad to be alive, there is no power which can compel you to feel differently. Good feelings spring up from within you; they cannot be forced into your being. So there are people—vain, extremely selfish, self-centered, unfriendly folk—who are not touched by any higher feelings than their own selfishness. They are unworthy to share in the benefits a great nation bestows.

A young girl had to write an essay once on "Pa-

triotism." She said at the very beginning, "Patriotism is a virtue which will ever be universally admired even by those incapable of possessing it." She told a great truth. Even persons of low and selfish desires, who seldom if ever experience lofty emotions, nearly always, deep down in their souls, wish they were like the higher type of people around them.

You can be of mighty little good in connection with anything worth while if you think of nobody but yourself all of the time, or even most of the time. It is very wrong to assume that attitude; there is no excuse for it. You are so dependent upon things outside of yourself that it is practically impossible to live without the help of unseen forces and of the people who surround you. You owe heavy obligations to all of these.

Let us see about this debt we owe. A certain secret society which teaches right living says that one's first duty is allegiance (or service) to God; next, allegiance to your country, then to your family, later to your neighbor and, lastly, to yourself. Most people agree that this statement sums up our duty. If you agree, see how small you and I thus become personally in the great plan of life.

Is it right to put the needs of the family—father, mother, brothers, sisters—below the demands of your country? Yes, because if the nation is in danger, millions of families may be made to suffer, and millions of families are more important than one family—even *your* family.

Would father leave you and mother and go to war to save the land from a foreign foe? Yes, for if an enemy should conquer, even the home might perish. If father gives his life in such a cause, as millions of fathers have done, and the country is saved, father makes his sacrifice that the country may continue to protect those he leaves behind. He goes not only for the good of his own loved ones, but to

help all other families, too; that is the highest patriotism.

Any motive which prompts you to serve your country even in humble ways is a patriotic motive. Patriotism may be expressed in slight acts by little folks as well as in great heroic feats by strong men and brave women. You and your playmates can keep the alleys free from unsightly and unhealthful material; you can be reasonably thrifty, for to save and not to squander recklessly is a patriotic duty; you can refuse to patronize bad moving pictures, for corrupt morals kill patriotic feelings; you can set a good example before the playmate who refuses to give other boys and girls their rights, and thus teach that there is such a thing as brotherhood; you can keep yourself clean and worthy to salute the flag of your country whenever you see it "fair floating in the breeze." If you are a good citizen as a boy or girl, and do those things from choice which make your home and neighborhood better you will do naturally greater things which will make your country better when you become men and women.

Your nation needs patriotic men and women. Can you imagine what utter ruin would result in a few years if nobody gave one thought to the good of our common country but, on the contrary, looked only to his own selfish interests? You have heard unkind things said about so-called "reformers." These are generally men and women who are trying to keep our country from danger of destruction through lawless acts of a class who care for nothing unless they are going to reap a personal benefit, no matter at whose expense; to such men patriotism has absolutely no meaning. Do you not despise the attitude of a man who sneers at your government and who tries to get men to help him destroy it—then cries to that same government for protection when he gets into trouble?

Remember that you can never get something for nothing. You have to pay in some measure for every benefit you enjoy; you cannot go through life and amount to anything without returning to your nation a part of what you get from it. But if you paid full value for what you receive in all manner of good things you could never get enough money together to square the account.

Do you get the idea that you *get* more than you *give?* It is exactly so. We organize as communities to provide for our public needs, and each receives full benefit personally from what the community accomplishes. Let us illustrate. You are given a good education through the kindergarten, the common school and the high school, without one cent of cost for buildings or for teachers' services, unless your father owns property; if he is a landowner he pays a very few dollars a year for schools—not one one-hundredth of the value that you get back in education. Your father and other fathers on your street might hire a man to protect their property—if they could afford to pay quite a large sum for the service; the city policeman patrols your street and protects you whether you pay anything for the service or not. All owners of property are taxed for all the machinery of government, by which benefits and rights are secured to a value really beyond estimate, and that same protection extends to all people, regardless of their ability to pay for it.

But the obligation of people to their government does not cease when they pay their taxes. They must do their full duty to maintain that government in a high state of efficiency, that their individual welfare may not suffer. They must send good men to make the laws under which they are to live; they must realize that it is almost a sacred duty to vote at every election, and to give their votes only to men in whom they have confidence; they must uphold the officers

of the law in all efforts looking to the public good. These are some of the things properly due from us in return for all the valuable public gifts showered upon us.

There is enough evidence of the greatness of your government right around you every day to make you feel proud of your country. Then as you extend your view as you grow older and wiser and realize what it means to be a citizen and a working partner in your state and in the nation there will be found a thousand added reasons for thankfulness that you are an American. The man who wrote the following poem felt as you and I ought to feel, to-day and every day:

America! Mine!
Ay, comrades and thine.
Thy very name ripples with music, and rolls
Like the oceans that surge 'twixt the mystical poles.
Land of great Boone,
Of Marion, Wayne;
Of Hamilton, Jefferson, Washington, Blaine,
Of thousands that lived and died all too soon;
Who beat out broad paths for new feet to tread,
From the time when the first white man met the first red,
Down to Crocket's and Bowie's, they of the band
Who for liberty died by the old Rio Grande!
The Alamo forget not, nor for what that band died,
While reason sits throned in its glorious pride.
And worship our Kearneys, our Grants—and the brave
Who enriched the old earth the old Union to save!

My dear native land!
I lift my right hand,
With my left on my heart, and my eyes to the skies,
And my soul on my tongue,
While I list to the breezes that, mayhap, have sung
Round the world since the dawn of creation tore the veil
of the long night apart,—

My very heart cries:
To be born in thee, be of thee, breathe thy sweet air,
To die in thee, rest in thee, under the glare
Of the sun, and the moon, and the stars, and the folds
Of the stars and bars of thy banner, which holds
Over all, that which monarchs despise:
Liberty, brotherhood, union, and all.
Here on the sod,
Under night's pall,
I cry out: Thank God!

America! Mine!
Ay, any man's—thine!
Thine from the jungle, from Africa's plain;
From the knout, from the chain;
From the land where the mothers of conscripts' tears flow
Like the rain,
When the flesh of their flesh and the bone of their bone
march away to fight, wound, and be slain;
From the fair land of Austria, Italy, Spain;
From Erin, whose woe
Fills the hearts of republics with horror and pain.
This land of the free is for thee!
Live in it, work in it, love in it, weep in it,
Laugh in it, sing in it, die in it, sleep in it!
For it's free, and for thee, and for me,
The fairest
And rarest
That man ever trod;
The sweetest and dearest
'Twixt the sky and the sod,
And its mine,
And it's thine,
Thank God!

The Meaning of Flags

A little boy stood with his mother on the deck of a great steamship as it approached the American shore after a pleasant voyage across the ocean from Europe. Suddenly he straightened, and pointing eagerly at an object waving in the breeze on the shore, exclaimed "Oh, mother! Look! There's our flag!" His words rang with pride, and his joyous laughter was a delight to men and women standing near.

"There's Our Flag"

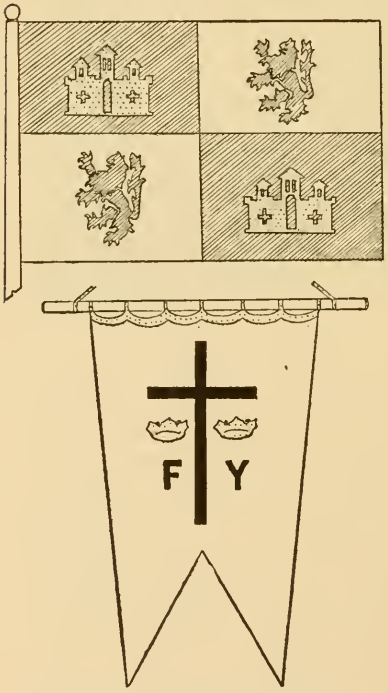
The flag of his country, and your country and mine, dear boys and girls, was floating from a staff in front of a small building on an island which was some miles from the harbor entrance. The little boy had seen flags like this one many times in his life before he went abroad; he had just returned from lands where other flags waved as grandly and were viewed as proudly. The flags of England and France and Italy he had observed, but they had made no particular impression on him. Why was he so stirred at sight of the red, white and blue of the flag of the United States? Had he been asked, he would have said, "Because it's mine, and I love it!" without being able to put his reasons into words. But behind it all there dwelt in his young consciousness a feel-

ing that his flag stands for something so big, so good, so noble that almost everything else is unimportant by comparison. He knew that his father had bought a flag for him for a few pennies, but he also knew (for his father had explained it to him) that those few pennies meant little in really valuing the flag, for before it had meant anything to anybody it had cost more than can ever be told in money, in sacrifice, in loss of life of many thousands of brave men. It became *our* flag and *his* flag only because our fathers and grandfathers and their fathers and grandfathers had made it theirs through hardship, suffering and death, and had passed the priceless symbol of freedom, purchased at such cost, down to us.

Is a piece of bunting, colored with red and white stripes with a field of blue dotted with stars, something to make men willing to die for? In every war before the last one, in 1914, when men went into battle they carried their flags before them, regiment by regiment, into the hottest fight. The enemy always tried to kill the standard bearer, believing that if the flag fell its followers might waver, then turn and run. When they succeeded in hitting the man who bore the flag, however, always a companion eagerly would grasp it and wave it high to inspire anew the fighting ranks! When no command could thrill the soldier, how his spirits would rise on sight of his country's flag floating a defiance in the face of the enemy. We know these facts are a part of history, but why will a person sacrifice himself, if need be, dying willingly for his flag? The little boy of our story cannot tell why, but he gets something of the idea; he knows he would want to punish another boy who spoke ill of his country's flag or who by any act insulted it. There is some feeling within him which makes him understand that when that banner no longer means anything to him nothing else

is going to mean much. The banner is only an oblong of cloth, a piece of bunting or of silk, lifted into the air, but it is radiantly colored, and every color has a voice. Its thirteen stripes, of alternate red and white, proclaim the original union of thirteen states to whom we owe our independence. Each of its stars, now forty-eight in number, represents a state. Together they typify union, past and present. The very colors have a language, recognized officially by the early patriots—red for valor, white for purity, blue for justice. "All together," said Charles Sumner, "bunting, stripes, stars and colors, blazing in the sky, make the flag of our country, to be cherished by all our hearts, to be upheld by all our hands."

THE FIRST FLAG ON AMERICAN SOIL. Would you like to know what the first flag looked like that was flung to the breeze on this side of the ocean? It was the banner of Columbus, a design made personally by him, which he carried with the flag of Spain. A picture of these flags, the first to catch the American breeze, is given on this page. The shaded lines running diagonally mark bright red parts; the castles and the two crowns are yellow, like gold; the lions are also red, on a white background. The Columbus pennant below and the cross stick are



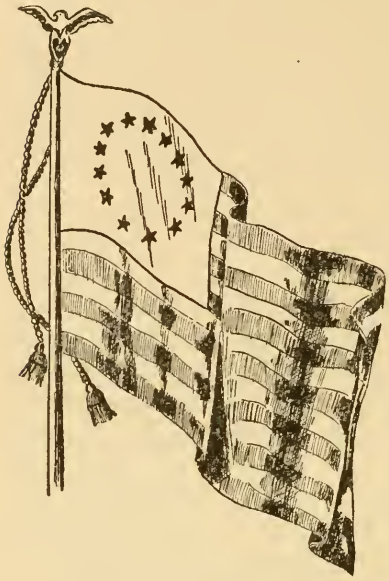
ABOVE: THE FLAG OF SPAIN
BELOW: THE BANNER OF COLUMBUS

white, with yellow tips; cord and upper border are yellow; the cross and the F and Y, for Ferdinand and Isabella (Ysabel) are green.

EARLY AMERICAN FLAGS. Each colony in America was at first independent of all others, and various flags were designed to represent them. These naturally were patterned in some degree after the English standards, with the English cross conspicuous in some of them. After 1750 the spirit of independence among the colonies was reflected in many banners. South Carolina adopted a yellow flag with a rattlesnake coiled in the center, and below the warning, "Don't tread on me!" The earliest flag to assert independence was also raised in South Carolina; it was solid blue with a crescent moon in the upper left corner and in the center the word "Liberty." The pine-tree flag was one of the first in America, it having come into favor in New England as early as 1704. In one form it was a blue flag with white field, on which was the red cross of St. George, with the green tree in the first quarter. Another form showed a green tree centered on a white surface, with "An Appeal to Heaven" above. New York's early banner was white, with a black beaver in the center. There were numerous others, most of them not so well known to us now.

THE BIRTH OF THE AMERICAN FLAG. In June, 1776, George Washington was called from New York to Philadelphia to confer with Congress on public affairs, and he was one of a committee of three to design a flag for the new nation which had then been fighting for a year for its independence. Washington knew of the skill of Mrs. John Ross (Elizabeth, familiarly called "Betsy"), and the committee visited her at 239 Arch Street—the building still stands as a Ross Memorial. A rough design was shown, and Mrs. Ross suggested alterations, which

were accepted; one of these was the change from six-pointed to five-pointed stars. The "Betsy Ross flag" is shown in the illustration. Mrs. Ross was appointed flag-maker for the government, and continued in that position for many years.



THE "BETSY ROSS FLAG"

RULES GOVERNING THE FLAG. The following regulations have been adopted for use of the American flag:

The Flag should not be raised before sunrise and should be lowered at sunset, but may fly at all times during war.

ON MEMORIAL DAY. May 30th, the National Flag should be displayed at half staff until noon, then hoisted to the top of the staff, where it remains until sunset.

COLORS ON PARADE. When the colors are passing on parade, or in review, the spectator should, if walking, halt; if sitting, arise, stand at attention. Men should remove their hats; women should place the right hand over the heart, stand erect and fix the eyes straight ahead.

WHEN PORTRAYED. The flag when portrayed by an illustrative process should always have the staff so placed that it is at the left of the picture, the fabric floating to the right. In crossing the flag with that of another nation, the American flag should be at the right.

USED AS A BANNER. When the flag is used as a banner, the blue field should fly to the north in streets or roads running east and west, and to the east in streets or roads running north and south.

USED ON A COFFIN. When the flag is placed over a coffin, the blue field should be at the head.

DESECRATION OF THE FLAG. No advertisement or lettering of any sort may ever be placed upon the flag, nor may it ever be used as a trade-mark. It should not be worn as the whole or part of a costume, and when worn as a badge it should be small and pinned over the left breast or to the left collar lapel.

DISPLAYING THE FLAG. The flag, out of doors, should be flown from a pole whenever possible. In the United States Army all flags are suspended from poles and in no other way.

USED IN DECORATIONS. When the flag is hung vertically (so it can be viewed from one side only) the blue field should be at the right, as one faces it. When hung horizontally the field should be at the left. The flag should never be placed below a person sitting.

WHEN THE FLAG SHOULD BE FLOWN. Either by order or custom the flag is flown on the following days, to commemorate the events of the years named:

October 12, 1492.....
.....Discovery of America by Columbus
November 11, 1918..Armistice Day, or Liberty Day
December 22, 1620.....Landing of the Pilgrims
December 25 .....Christmas
January 1.....New Year's Day
February 12, 1809....Birthday of Abraham Lincoln
February 22, 1732..Birthday of George Washington
May 30.....Memorial Day
July 4, 1776..Declaration of Independence Adopted

Labor Day.....First Monday in September
Mother's Day.....Second Sunday in May
Arbor Day and Bird Day.....
.....Vary according to the locality
Thanksgiving Day....Last Thursday in November
Presidential Election Day.....First Tuesday after the first Monday in November, in even-numbered years, divisible by four.

POEMS ON THE FLAG. The red, white and blue banner of our country awakens our patriotic devotion, and no poems thrill the heart more than those dedicated to the flag. Boys and girls should commit to memory one or more of these, and of the great number which might be printed we choose the following as among the best:

THE FLAG IS PASSING BY

Hats off!
Along the street there comes
A blare of bugles, a ruffle of drums,
A flash of color beneath the sky.
Hats off!
The flag is passing by.

Blue and crimson and white it shines,
Over the steel tipped ordered lines.
Hats off!
The colors before us fly,
But more than the flag is passing by.

Hats off!
Along the street there comes
A blare of bugles, a ruffle of drums,
And loyal hearts are beating high.
Hats off!
The flag is passing by.

Your Flag and My Flag

Your flag and my flag,
  And how it flies today
In your land and my land
  And half a world away!

Rose-red and blood-red
  The stripes forever gleam;
Snow-white and soul-white—
  The good forefathers' dream.

Sky-blue and true-blue,
  With stars to gleam aright—
The gloried guidon of the day,
  A shelter through the night.

God Save the Flag

Washed in the blood of the brave and the blooming,
  Snatched from the altars of insolent foes,
Burning with star-fires, but never consuming,
  Flash its broad ribbons of lily and rose.

Vainly the prophets of Baal would rend it,
  Vainly his worshipers pray for its fall;
Thousands have died for it, millions defend it,
  Emblem of justice and mercy to all.

Justice that reddens the sky with her terrors,
  Mercy that comes with her white-handed train,
Soothing all passions, redeeming all errors,
  Sheathing the sabre and breaking the chain.

Borne on the deluge of old usurpations,
  Drifted our Ark o'er the desolate seas,
Bearing the rainbow of hope to the nations,
  Torn from the storm-cloud and flung to the breeze!

God bless the Flag and its loyal defenders,
  While its broad folds o'er the battle-field wave,
Till the dim star-wreath rekindle its splendors,
  Washed from its stains in the blood of the brave!

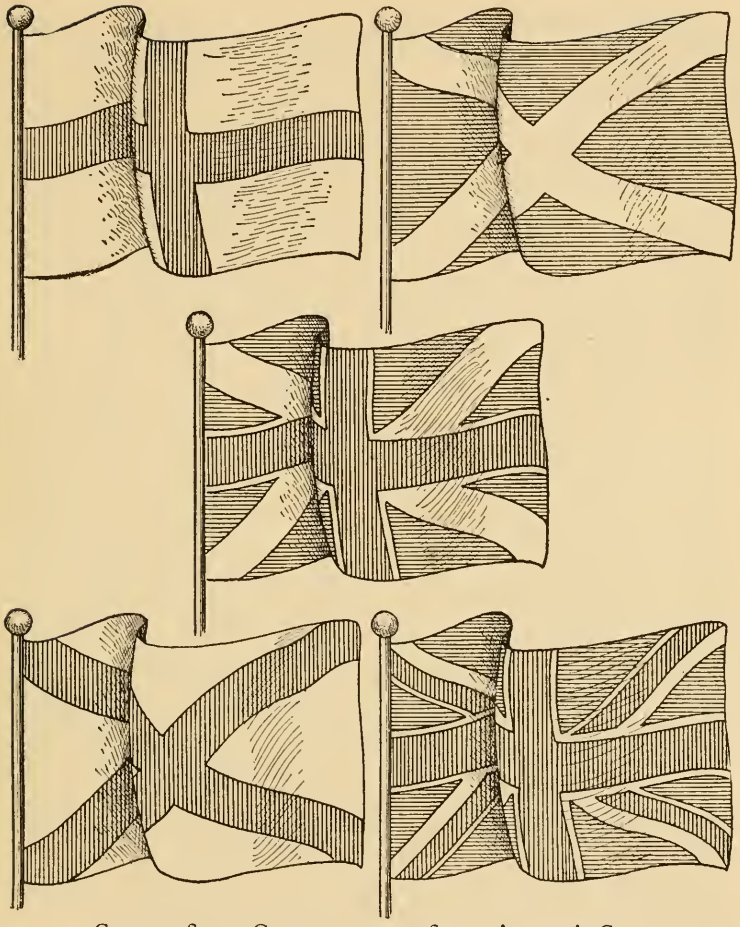
THE BRITISH FLAG

When a thoughtful person beholds a nation's flag he sees not the flag only, but the nation itself. Whatever may be its form or whatever symbols may be displayed he notes more than form and colors, for he reads in it the government and something of the history of the country. We realized the truth of this statement in the story of the flag of the United States. The same is strikingly true of that of Great Britain.

To-day it is the proud boast of Englishmen that the sun never sets on the British flag; this is true, because the possessions of Great Britain encircle the globe. Wherever the authority of the English nation is recognized the Union Jack floats to the breeze; it is the one flag in all the world you would see most frequently in a trip across the seven seas. It waves proudly not only in the British Isles, but in Canada, Australia, New Zealand, South Africa and in hundreds of islands dotting the oceans. And everywhere the people are as devoted to it as Americans are to the "Stars and Stripes." When the great World War broke out in 1914 Canada, Australia, New Zealand and South Africa had no part in the complications which caused it, but the mother country was threatened, *their* flag had been assaulted, and each of these great parts of the Empire followed the banner of British freedom into the heaviest of the fight and remained a part of the English strength to the end.

What is the Union Jack? Why called *Union* and why *Jack?*

One of the earliest flags of the present British Isles—and the earliest of those that have survived, even in part, is the cross of Saint George, a white flag with a rectangular red cross along its entire length and height, dividing the white into four equal areas (see illustration 1). In 1603, under James I, England and Scotland came under one sovereign, but



Cross of Saint George — Saint Andrew's Cross
The King's Colors
Cross of Saint Patrick — The Union Jack

were not politically united until the next reign. Then George's cross was joined with the cross of Saint Andrew of Scotland, to form what became known as the "King's Colors." The cross of Saint Andrew is a blue flag with diagonal white stripes (shown in illustration 2). The combination of these two flags, making the "King's Colors," is shown in illustration

3; it has a field of blue with the rectangular red cross and the diagonal white cross, the red all showing and the white broken at the points where they meet.

After King Charles I was beheaded in 1649 the union of England and Scotland was dissolved; then each returned to its original standard—Saint George's cross was again the English flag and Saint Andrew's, the Scottish. In 1707 the kingdom of Great Britain, comprising England, Scotland and Wales was formed, not again to be divided, and a new flag appeared, called the "Meteor Flag." It was a red ensign, with the crosses of Saint George and Saint Andrew, the "King's Colors," in the field (see illustration 3). This was the emblem of the kingdom and its colonies until 1801, when Ireland was added to the union, to be known thereafter as the United Kingdom of Great Britain and Ireland. Ireland's flag had featured the cross of Saint Patrick, a diagonal red cross on a white background. This cross was added to the nation's flag, covering in part the white cross of Saint Andrew. Saint Patrick's cross was narrowed, that it might not entirely cover the white, and broken; the arms below the horizontal part of Saint George's cross show more white below the red than appears above it; above the central horizontal red the wider white diagonal appears above the Saint Patrick arm (see illustration 5).

The British flag thus historically portrays the union of England, Scotland, Wales and Ireland, so the word *Union* in its name is accounted for. The word *Jack* is supposed to be from the Latin *Jacobus,* which in English means *James,* and James I was on the English throne when the first political union was formed.

The naval flag of Great Britain is red, with the Union Jack in the upper left-hand corner, a location

similar to that of the stars on the blue field in the American flag.

THE FLAG OF FRANCE. Most nations, by varying forms of their flag and by addition or elimination of symbols, represent different arms of their government service. This is true of the United States and Great Britain, but France is an exception to the rule. The great French Republic flies only one flag—the loved tricolor, three horizontal stripes of red, white and blue, signifying liberty, fraternity, equality. This flag was born when the kings of France were driven out and a government of the people was established.

OTHER FLAGS. The colors red, white and blue are favored more than any others by the nations of the world for representation on their flags, and some of them have adopted the three horizontal bars, similar to the French tricolor but with different order of the colors. Yellow and green appear on numerous flags; Italy's is one-third green, the section next to the staff; Brazil's is largely green and yellow; Portugal's is nearly one-half green. Black comprises one-third of the flags of Belgium and Germany.

Insects

An insect is an animal, even though it be as small as the head of a pin, for an animal is any living thing which possesses some or all of the senses and has the power of motion. This is probably something new for you to think about, for it may never have occurred to you that a little creature so tiny that you can scarcely see it is called by the same common name that you give to the horse or the elephant.

Also we want to tell you that over half of the animals of the world are insects—that there are more of them than of all other forms of animal life combined. How many insects are there in the world? You might almost as reasonably ask how many drops of water there are in the sea! Learned men say there are between five million and ten million different kinds or species of them, and there are countless millions of each species.

Not all of the little, crawling things you see are insects. Under this name are only the myriads of living creatures consisting of three parts—head, thorax (chest) and abdomen—and whose body is composed of segments. The head has not less than six segments, the thorax has three, and the abdomen from ten to twelve. There are three pairs of legs and two pairs of wings on such specimens as are not wingless.

From the above very brief description it will be seen that the spider and its relatives, all of which have eight legs, and the centipede, with about thirty pairs of legs, and a few other small bodies are not insects, but belong to other branches of the animal kingdom.

How Insects Develop. The young of some are brought into existence alive and perfectly formed,

but a great many species develop from eggs and undergo remarkable changes of form before they reach the adult stage. This process of development is called complete *metamorphosis* (met-a-mor'-fo-sis)—a long and hard word which means change of form and structure. In complete metamorphosis in the different changes there is no resemblance in the various stages of development. In incomplete metamorphosis the insect hatched from the egg has the general form of the adult and develops without entering a quiet intermediate stage. We shall refer briefly to the wonders of the complete change of form and structure.

THE VARIOUS STAGES OF METAMORPHOSIS. The insect egg is of course a very tiny thing, best observed through a microscope. Eggs are usually laid in clusters and when they hatch the young take the form of a caterpillar, worm or grub, whose scientific name is *larva.* The larva grows day by day and within a short time the outer soft covering is thrown off and the next stage of development shows the insect in what is known as the *pupa* stage. This is a stage or period of quiet; instead of a soft, pulpy mass such as the larval stage discloses, the pupa has a harder shell or covering, or is enclosed in a cocoon, and its form is often more like that of the insect which is soon to develop. To the observer the pupa appears lifeless, but in time the outer covering is broken and the perfect insect, called the *imago,* appears.

In the picture presented here we show you the marvelous development of the monarch butterfly. The figure *a* is the egg, very much enlarged; *b* is the caterpillar (larva) form which develops from the egg; *c* is the somewhat harder-cased pupa, also known as the *chrysalid;* from this develops the gorgeous butterfly which you so much admire as it clings airily to the tip of a beautiful flower or rests on a leaf.

WHY DO INSECTS EXIST? We ask that question because so many children ask it, but we cannot give the entire answer, nor can anyone give it, so far as we know. We think of them only as pests, and this is true of a very great number of species, but even the pests serve us a good purpose. You learn from the article on birds in this book that our feathered friends eat literally millions of insects. If birds could not find insect food they would be obliged to hunt another bill of fare, and who could blame them in such an extremity for attacking our growing crops? So may we say that one use of insects is to furnish food for the birds?

Some authorities state that were it not for destructive insects vegetation would be so luxuriant that all plant life would be so crowded together that it would die for lack of nourishment. This may not be wholly true.

DESTRUCTIVE INSECTS. Many insects are terribly destructive. It costs the United States many hundred million dollars a year to run the government, but we get something of value for this huge expenditure. Insects destroy crops every year to a value in dollars exceeding the expenses of government, and we get nothing except discouragement from the fact.

The cotton boll weevil takes out of southern planters' pockets about $25,000,000 a year, for it destroys cotton which would sell for that sum if it could grow unmolested.

The army worm is one of the hungriest of insects and its particular delicacies are hay and other like crops. Gazing upon a picture of this insect as shown on our colored panel picture can you readily believe that it causes $30,000,000 a year loss to farmers? It was named the army worm because it and its fellows march across the country in great masses like an army, devouring everything in their path. The colored panel illustration shows

the worm and the moth from which it develops. Working with this pest are the corn cutworm, the earworm and other crop destroyers who add over $60,000,000 yearly to the losses of the farms.

The chinch bug is the greatest enemy of growing wheat; although but about one-sixth of an inch in length these bugs eat $20,000,000 worth of wheat every year in the United States alone, and later in the season they feast on corn. Each female lays about 500 eggs twice each year, and most of them hatch. You can see how hard is the task of getting rid of them all; it simply cannot be done, even though the birds eat millions of them and farmers take all known preventive measures.

The codling moth is another insect expensive to agriculture to the amount of $20,000,000 yearly in the United States. The moth doesn't do any damage, as a *moth,* but in the changes which occur in its development from the egg, we find the larva, or caterpillar, to be the real enemy. The mother moth lays her eggs deep in apple-tree blossoms. When the flower disappears and the little apple commences to grow the larva of the moth, a little, hungry gray-brown worm, eats its way into the center and the apple is ruined. The worm spins its cocoon, and from it the complete insect, the moth, emerges in a few weeks, ready to begin as did its parents the work of laying other eggs to be hatched in time for its larva to attack late apples.

Grasshoppers and locusts are dreaded insect enemies, for not infrequently they descend in mighty swarms upon growing crops and totally destroy them. In the years 1874 to 1876 farmers in Nebraska and Colorado were brought near to starvation because their crops were destroyed by these pests.

The grasshopper and the locust are interesting insects to study. The ear is located just above the spot where the leg joins the body. There are two

little eyes and two much larger compound eyes. They have no vocal organs, although they make musical sounds with which every child is familiar. The grasshopper, like the cricket, makes its characteristic sound by rubbing together its forewings. The locust produces its "music" by scraping the inner surface of its thigh across the rough surface of its forewings. They have been known to travel in great numbers more than a thousand miles in a season. We may thank the birds for the fact that grasshoppers and locusts are not so plentiful that they can destroy all crops. Birds eat them in astonishing numbers.

The very names of certain insects tell us of their dangerous character. So we know what to expect from the presence of the asparagus beetle, cabbage worm, cucumber beetle, potato beetle, and the like.

The gypsy moth in its caterpillar stage is very destructive. It will strip forest trees of their leaves and make bare fruit trees, vines and shrubs. The New England states have spent several million dollars in campaigns to destroy these moths, and have met with considerable success.

The May beetle, or June bug, is so named because it is most common in those months. They prefer to work nights rather than in daylight, and they eat leaves of trees and shrubs. In the caterpillar stage these bugs live in the ground at least a year and live on the roots of grass and small plants.

The click beetle gets its name from a snapping sound which it produces by a quick movement of its parts, by which it can project itself some distance into the air. It has a way of falling to the ground as if dead if touched or alarmed. Boys and girls know this insect best by the name of "snapping bug." Cubans once wore dead click beetles on their clothing as ornaments. The young of this beetle is the wireworm, which destroys seeds and roots.

The cutworm is a villain, for he hides by day and

works only at night. After dark he emerges from the ground and feeds on the stalks of plants, cutting them off at the ground level. Sometimes these pests become so numerous that they can destroy an entire garden in a single night.

The walking stick, which belongs to the locust family, is hard to find, because it looks almost exactly like the twigs and branches to which it clings. It eats the leaves of trees and plants. The yellow jacket feeds upon the juices of ripe fruit and thus causes some damage, but he pays for it by killing grubs and other destructive insects.

Lastly, the cockroach is hated, for he is a dirty scamp who enters our homes. We do not give much thought to some insects for they live outdoors and do not cause us personal trouble or inconvenience. But the cockroach comes to live with us. A very few cockroaches in a home will speedily increase to a great number. They will enter a house by a water pipe or through crevices and go from floor to floor by the same means. They seldom show themselves in daylight, but at night they emerge and in the search for food swarm over kitchen, pantry and sink and contaminate everything they touch. No one has ever satisfactorily answered the question, "Why is a cockroach?"

BENEFICIAL INSECTS. Can you believe that some insects never do any harm, but, on the contrary, are actually of value? After reading of so many that are destructive, you may doubt this, but it is true.

Look at the ladybird beetle on the chart panel. Not only is it a pretty little thing, but care is taken in many localities to protect it, for it feeds almost exclusively upon plant lice and scale insects, which are destructive.

The tiger beetle, in its larval stage, is a "homebody," for it does not stray from its burrow in the ground. It lives on insects which it catches when

they pass its habitation. In the adult stage they are lively and are strong fighters, from which fact they get their name.

The dragon fly prefers one delicacy in the line of food, and that is mosquitoes. During the day dragon flies are constantly on the wing hunting this household pest. If they flew at night there would be fewer mosquitoes. Boys call these insects "devils' darning needles," and very young boys and girls are told that "they will sew up your ears." But they soon learn that this is not so. This insect is entirely harmless, and is really beneficial in destroying mosquitoes and gnats.

The soldier bug lives its life on plants and engages in the business of hunting insects for food. Fortunately he destroys vast numbers of those that are a menace to gardens and fields, and hence is a beneficial little creature.

The great beetle which boys and girls commonly call the "pinching bug" is properly known as the stag beetle. The name was given it because of the length and shape of its hornlike projections. The eggs appear as small white balls; the larvae live in holes bored in the bark and trunks of trees, sometimes as long as five or six years, before emerging as adult beetles. They live on sap and the honey dew secreted by aphids and scale insects.

THE BEES. Bumble bees and honey bees are among the most useful insects. Boys and girls know that we get all our honey from honey bees and that they work very industriously to supply us with that delicacy. But of what value is the bumble bee? It is a pretty little creature, clothed in yellow and black, but we do not wish it to come near us, for it has a very painful sting. No wonder the poet calls it an "animated torrid zone"!

In the article on flowers we are told that a flower could not grow and reproduce itself unless pollen

from its own stamens or from the stamens of other flowers is brought to its pistil. Each flower manufactures a sweet substance called nectar, for the purpose of attracting bees, moths and other insects. They visit the flowers in search of nectar and the pollen from the blossoms is rubbed on their feet and legs, then is carried to the next flower visited and is left on the sticky pistil. The flower is thus fertilized.

Not all insects can reach the pollen of every flower. The honey bee is never seen working on red clover, for the blossom is so large that it cannot reach the nectar; it always seeks the smaller white clover. The larger bumble bee, however, with its longer tongue, seeks the red clover and carries the pollen from one blossom to another.

If there were no bumble bees we would have no red clover. This was proved in Australia. Red clover seed was planted in that country, but the second year the crop was a failure; the seed from the first crop was not fertile, because no agency was present to carry the pollen from stamens to pistils. A great many bumble bees were imported, and thereafter the clover crop was plentiful.

An entire book of the size of this one you are now reading could be filled with interesting facts regarding bumble bees and honey bees. You can get such books from your library.

THE ANTS. Ants are known as *social* insects, that is, they do not live alone, but in great colonies comprising from 2,000 to 10,000 or more individuals. Each colony is composed of three kinds of ants—males, females and workers. The latter are undeveloped females, and are more numerous than males and females together. Males do not live long, for in ant life no individual who does not continue to benefit his colony can be allowed to "hang around." Males and females mate in the air while flying on their gauzy wings; soon after their return to the

nest the males die and the females, never again to fly, tear off or rub off their wings and thereafter give themselves to egg laying. The young ants are tended by the workers until they are able to care for themselves.

Some writers declare that ants are endowed with intelligence; what they possess in this direction is really rare instinct. But surely their well-ordered community life leads us to believe that they do many things better than some affairs are conducted by human beings endowed with judgment and a good degree of intelligence.

An ant which will not do its full share of work is driven from the colony or killed. When the Biblical writer said, "Go to the ant, thou sluggard; consider her ways and be wise," he pointed to one of the greatest examples of untiring industry that the world ever witnessed.

If you will secure a book on ants from your public library you will find it as interesting as a novel.

Flowers

There is magic in the very word "Flowers"! At its sound we see at once damp spring woods, with early violets in shady hollows and jack-in-the-pulpits preaching to waving grasses; buttercups in sunny patches, pale yellow primroses in the hedges and near the ditches; gorgeous tulips, delicate daffodils and the proud narcissus in the garden; dandelions on the lawns. Or we may think of florists' shops with purple-red American Beauty roses, their stems as tall as we are, their price a dollar a blossom! Or of pure-white Easter lilies, pansies with enameled faces, moss roses sheltered from the wind, tiger lilies dazzling the eyes, magnolias sending out overpowering perfume from their white velvet blossoms, and fringed carnations spicing the garden paths. Then we shall think of autumn, gold, brown and red, the fields and roadsides yellow with golden-rod, purple with asters and red with fiery leaves and berries. Spring, summer, autumn, each is jeweled with its gem-like flowers, even winter bearing on its white bosom the green and red holly, and the yellow green mistletoe. Flowers! They speak a language which even a babe may understand.

There is added magic in each flower-name if we know what the poets and story writers, what the old legends and fairy tales, tell us about each flower. We are going to explore among the flowers to-day and learn something of their story.

THE ROSE. From the beginning the rose has been the "queen of flowers," the best beloved of all. Our heathen Northern ancestors, the very ancient Scandinavians, made it the flower of Frigga, or Freya, who was their loveliest goddess, beautiful and

sweet, the goddess of love and spring. The old Greeks and Romans, too, made it the flower of the goddess of love and beauty, whom they called Venus. They tell in a myth which has come down to us how the rose was once white only; but Venus loved Adonis, a beautiful youth who was slain by a wild boar; as she ran to help him, she pricked her foot on a thorn, dyeing the rose red, a color it has had since. Of course such a story would not do for our Christian forefathers, so they tell another tale—how the red roses sprang from some burning brands that were put out just in time to save a beautiful Christian girl from death by fire. They also tell how the rose of Jericho sprang up everywhere that Mary and Joseph rested on their flight into Egypt with the infant Jesus. So after that, the rose was dedicated to the Virgin Mary, and prayers to her were said on the *rosary,* which may mean that every prayer was a rose, or that for beads the smooth, hard rose hips or seed pods were used.

Perhaps the most beautiful story of the rose is told by the Persians, who have a sacred book called the "Garden of Roses" and a festival called the "Feast of the Roses." They say that the nightingale is the lover of the rose; that when he sings his plaintive melody the rose opens; that he hovers over her till he faints with her sweetness; and that he sings his saddest song when the roses are gathered.

Our lovely flower figures much in history, too. There was once in England a "War of the Roses," when the soldiers under one leader wore red roses on their helmets and those under the other wore white. And a legend tells us that because the war was ended by the Prince of the Red Rose marrying the Princess of the White Rose, the bushes that year bore roses of both colors, and roses of mingled red and white!

Furthermore, roses and other flowers used to be part of the rent paid for land; and in France up to

the sixteenth century, a nobleman, each year before the meeting of the assembly, had to strew the palace halls with rose leaves and give rose garlands to each member. Crowns of them were prizes and rewards, garlands of them decorated shrines, festivals and feasts. There is no end to the rose in song, story and history.

THE LILY. This beautiful flower runs a close second to the rose in favor. Its tall stateliness has given it the title of "king of flowers"; as the rose stands for love, so the lily stands for purity and peace. It, too, is devoted in the Roman Catholic Church to the worship of the Virgin Mary, and is shown again and again in religious pictures. One very ancient story tells how the lilies got their milky whiteness from the Milky Way in the sky! Another tells how the water lily (which doesn't really belong to the same family) was found one morning after a fairy had used it in crossing a pond and then had passed on and left it there. It certainly is a dainty footpad for a fairy. The lily-of-the-valley is one of the sweetest, most exquisite members of the lily family, and was once thought to be of great value as a medicine, when distilled under the new moon and charmed in other ways. The tiger lily, shown in the chart, is a gorgeous relative which was brought from Turkey in Asia, and is therefore sometimes called "Turk's cap." It is a red-orange color with black spots, and will light up the darkest corner of the garden.

But perhaps the most interesting lore about the lily is its use on the French coat of arms. We have all heard about the "Lily of France," as we have about the "Rose of England." When France had kings they used the lily on their banners. No one is quite sure whether it is the real white lily or the blue iris (fleur-de-lis), not a lily at all, which is the "Lily of France"; but what does it matter, as long as the

"Lily of France" always means to a Frenchman what the American Eagle means to us?

FLOWER FAMILIES. We have spoken of the Lily Family, as if flowers were grouped like human beings. They *are* grouped in exactly that way, if we include in our family our cousins to the last degree. Perhaps we ought to say the Lily *clan* or *tribe;* but the botanist doesn't say it that way. The members of the Lily Family all have certain traits that separate them from other families. That is true of the Rose Family, another large group. Suppose we see what familiar flowers belong in the Rose and Lily families; then we can see what common characteristics they have. To the Rose Family belong the apple, pear, peach, plum, hawthorn, cherry, almond, strawberry, raspberry and blackberry plants, besides all the roses you can think of. To the Lily Family belong, besides the tiger lilies and white lilies, the tulip, hyacinth, yucca, onion and asparagus. Would you ever believe that the beautiful lily and the onion, which brings tears to your eyes when you cut it, are related?

THE TULIP. While we ponder over what each family has in common, let us think of some interesting things about another member of the Lily Family. The tulip, for instance, has customs and history connected with it. This gay flower gets its name from a turban; a very good name, indeed, if we remember how Turks look with their heads wound up in yards and yards of red or blue or yellow cloth. When a Persian man (who always wears a turban) wishes to tell a damsel that his face is on fire with love for her and his heart is burnt to a coal with love he hands her a tulip (look inside the tulip), and they are engaged! History says that a German brought the tulip bulb from Constantinople to Germany in 1559, and started all Europe, especially Holland, to growing tulips and making them larger and gayer than

ever. The Dutch gardeners were so skilful that bulbs rose to terrific prices. One certain bulb became worth so much money that six men owned shares in it. They speculated and gambled in tulips till these innocent flowers brought about quite a money panic; after that, tulip-growing became the wholesome gardeners' job that it should be.

DAFFODIL AND NARCISSUS. We might almost believe that the narcissus and the daffodil belong to our Lily Family; but their family name is Amaryllis. They, too, are beloved of the poets, and they figure in song and story. A tiny daffodil is the flower honored on the Chinese New Year, which comes a month later than ours. It is to them, as to us, a symbol of new birth. Sometimes village people call it "lent lily," as it appears before Easter like a herald of resurrection. Some of the most beautiful poems in our language are dedicated to the daffodils. One poet tells us how he saw them—

> "Beside the lake, beneath the trees,
> Fluttering and dancing in the breeze—"

outdoing the waves that danced, too, in their glee. That poem is full of the joy of springtime flowers.

The word *narcissus* hasn't so pretty a meaning, as we shall see, when we hear the story the Greeks tell. Narcissus was once a very beautiful Greek boy whom the nymph Echo loved. But Narcissus scorned her coldly, and she faded away in the woods till she became only a voice. Meanwhile, he wandered about in the woods till he came to a brook. His mother had seen to it that he should never look into a mirror, for it had been prophesied that a mirror would be his doom. Alas! the calm water of the brook was a beautiful mirror. Narcissus saw himself in it, but thought it to be someone else. He fell in love with his own image and hung over the water's edge, constantly pleading with his image to come to

him. He was scorned as he had scorned Echo. There he took root, and there the narcissus stands to this day, bending over the brook to look at itself.

THE THREE P's. The poppy, the pansy, and the primrose have also a story halo about them. The poppy is an old, old flower, beloved of the Chinese, Egyptians and the Greeks, who knew, as we do, that the seeds of the poppy contain a delicate salad oil, and from the flowers came opium for smoking and for medicine. The flower meant to them sleep-giving, and they devoted it to the god of sleep. Since the red poppy springs up among the grain, the Greeks also thought that it belonged to Ceres, the goddess of the harvest. To us the poppy means California, with rows and rows of marvelously-tinted flowers with perfect petals like silk gauze. Or it may mean to the farmer, as the daisy and the wild rose often do, troublesome weeds in his grain fields.

But our sweetest associations are very recent. Some of us have heard much about the poppies in the wonderful poem, "In Flanders Fields," and the American soldier boys who sleep beneath them:

IN FLANDERS FIELDS

In Flanders Fields, the poppies blow
Between the crosses, row on row,
That mark our place; and in the sky
The larks, still bravely singing, fly,
Scarce heard amid the guns below.

We are the Dead. Short days ago
We lived, felt dawn, saw sunset glow,
Loved and were loved, and now we lie
In Flanders Fields.

Take up our quarrel with the foe;
To you from failing hands we throw
The torch; be yours to hold it high.
If ye break faith with us who die,
We shall not sleep, tho' poppies grow
In Flanders Fields.

—LIEUT. JOHN MCCRAE.

The pansy is a relative of the violet and, like it, has been taken as a type for constancy and modesty. Its name means "thought," or "think of me," and so we give it to friends, or plant it on the graves of our loved ones. The beautiful old name of "heart's-ease" is even more comforting; the poets love to tell of it and how it grows more profusely in the gardens of the poor and lowly than in those of the rich and proud.

The last "p," the primrose, is the best beloved of English meadow flowers. It means the "first rose." It is very often called cowslip—and English girls make huge balls of it for their May-day festivals. Others call it the "key-flower," and many legends are told of how it opens doors. One legend relates how it opened the door of memory to a knight returning from the wars; how as he slept among the primroses he was a boy again in his childhood's home. Another tells how a bunch of primrose keys opens to a favored child the door of a castle, wherein lie gold and gems. The child takes of the treasures, but returns the keys, that he may avoid a black dog, who will follow him forever, if he neglects that duty. The evening primrose shown on the chart is not of the big Primrose Family, but belongs to a family all its own. It is a lovely, fragrant thing that opens suddenly at sunset, gives out a delicious perfume to visiting insects, and closes again at sunrise.

CARNATION, HOLLY AND MISTLETOE. These are highly-favored and are all connected with religious beliefs. The carnation belongs to the Pink Family, and was in Greek mythology the favored flower of Jove. Perhaps for that reason it was used so much in coronations or crowns, which may account also for its name. The holly and the mistletoe were also connected with heathen rites once upon a time, though now we consider them connected decidedly with the birth of Christ and with Christianity. The

Druids, old British priests, used the holly and mistletoe in their ceremonies; and our Christmas celebrations are celebrations derived in part from those of ancient times. However, our meaning is right, and that only matters. The holly means "holy," and our rather confused ancestors evidently thought it was a crown of holly that was put on Christ's head at his crucifixion. At any rate, the holly, which is green, with red berries, at Christmas time, when the rest of the world is white, is now the symbol of love and good wishes. The mistletoe, a queer, pale-green plant hanging on the trees when they are bare of leaves, and getting a good deal of its food from the tree it hangs on, has a sad heathen story connected with it. Frigga, the wife of the god Odin in Norse mythology, had a beloved son, Baldur; when he was born she thought she had made everything in the world promise it wouldn't harm him. Alas! she forgot to warn the mistletoe. When the gods were amusing themselves throwing things at Baldur and seeing them fall harmless, Loki, the god of mischief, gave the blind god Holdur a sprig of mistletoe to throw. It killed Baldur; and his mother grieves for him six months of every year. When Freya grieves, we have autumn and winter. But let us rather think how the mistletoe is connected with friends and lovers at Christmas time.

BLUEBELL AND BUTTERCUP. These are humble field flowers, common to both Europe and the United States. Fairy lore makes both of them beloved of the fairies; the bluebells ring for their weddings and dances, the buttercups make bowls for their tables.

OTHER FIELD FLOWERS. The golden rod, aster, blackeyed Susan and bitterroot are field flowers, too, of a later season and not so simple a type as the

bluebell and buttercup. The first three belong to a family called Composites because they are really not one flower, but a combination of numerous flowers. The centers are often of one kind of flower and the rays of another kind. Pick an aster or dandelion apart and note how it is formed. These composites and the bitterroot, which is of the same family, seem more distinctively to belong to our country, for we have the most varieties, and they are much commoner with us. The aster, to be sure, has a Japanese relative in the big, ragged and beautiful chrysanthemum, and it has been known in Europe and America for a long time. Its name has the pretty meaning of "star" —not so fitting for the purple New England aster, of course, as for the European white one. But purple fields of it east and west are true of America only. Also the rose-pink bitterroot carpets a fruitful valley in Montana, and has given it the name of Bitterroot Valley. Roadside stretches of yellow goldenrod are seldom seen outside of America. In fact, there is but little goldenrod to be found except in this country, where we have at least twenty-seven varieties. We often call it our national flower, though some people object to giving a weed that honor.

BLACK-EYED SUSAN. This attractive flower decorates our summer fields, too, in huge patches. Rather coarse flowers they are, but their sturdy, honest faces and their brown and gold color make as strong an appeal to us as many of the daintier garden flowers. The Black-eyed Susan is a relative of the sunflower, about which there is a pretty story.

THE STORY OF THE SUNFLOWER. The nymph Clytie fell in love with the beautiful sun-god, Apollo. Each morning she watched for his rising, each evening she gazed at his setting. Her love was a silent, secret love, and Apollo knew nothing of it—

would not have heeded her, perhaps, if he had. So devoted did she become that her face was always toward the sun, following his chariot of fire across the heavens. Gradually she took root and became a flower, which to this day turns its face in adoration towards the sun, throughout the livelong day. Whether the Greeks meant Clytie to represent our sunflower or one they call heliotrope doesn't matter; the story suits our sunflower, which keeps its face towards the sun. The poet Moore refers to this fact in the following lines:

> * * * the sunflower turns on her god when he sets,
> The same look which she turned when he rose.

THE RHODODENDRON AND THE MAGNOLIA. We have two other ornamental, American flowers, among many which could be named—the rhododendron and the magnolia, both with European connections. The former grows on a decorative garden bush, and is a close relative of the azalea. The magnolia grows on a dusky Southern tree, from which its white velvet blossoms, sometimes almost a foot across, gleam out like pale, fragrant moons. There is a tale that the velvet petals will turn black, if touched, so delicate is the flower. No greater compliment can be given a Southern beauty than to tell her she has a skin like a magnolia blossom.

PARTS OF A FLOWER. If you think we have nothing but song and story that is interesting about flowers, you are quite mistaken. Each little flower in itself is a miracle. While flowers all have common traits, still there is as much variety in the flower kingdom as there is a never-ending study of marvels.

Suppose we take a simple flower like the buttercup for our first investigation. We notice the small green leaves of the outer circle; that is the *calyx*

(husk), each leaf being a *sepal* (covering). The beautiful yellow petals make the *corolla* (a little crown). Now in the center we notice tiny slender stalks carrying small bags at their tops; those are *stamens* (the word stamen means *to stand*), the bags being *anthers* and containing the yellow dust called *pollen*. In the very center, covering the stalk "knob" from which the flower parts radiate, are the *pistils,* tiny flask-shaped objects with a sticky top. Many flowers contain only one such pistil, and many have fewer stamens. The corolla is often quite differently shaped; it may be bell-shaped, as in the bluebell; or formed into a keel with two wings, or standards, like the Pea Family flowers; or lipped, like a snapdragon; or tubular, like a honeysuckle.

How Seeds are Scattered. There are numberless shapes of flowers, as there are numberless colorings. But whatever the shape and color, flowers all do the same work and have about the same problems. They are the seed-makers of the plants; and a very big job it is. The pistil is really the seed pod, as you will see if you cut one through, and the whole flower is concerned with getting the seeds in that pistil ripened and scattered. Two problems must be solved: first, how to get pollen from its own stamens or from stamens of other flowers on to the sticky part of its pistil, for unless that is done no seeds grow; second, how to get the seeds scattered as widely as possible, since they will not grow if they fall too near the mother plant.

Why do you suppose the bees hover so constantly around flowers? Because they find there a delicious honey-drink called nectar, and also the bee-bread, pollen. That is true of moths, butterflies, and ants, too. Why do you suppose the flower manufactures such food? Because it needs insects, bees, butter-

flies and moths to carry the pollen from one flower to the pistil of another. That is one way of solving the first problem. Watch a bee in a sweet pea; see how he comes out dusted with yellow pollen, which he rubs off on the pistil of the next flower. Oftentimes a flower can use only one particular insect; then it shapes its flowers and deposits its nectar where just that one kind of insect can get it. It is a wonderfully fascinating subject, which you can read more about in your botany. This you must remember: the shape, the color, the fragrance of the flower, all have meanings, all are meant to help the flower in its big work of making and scattering its seeds.

The wind, too, is used to sweep the pollen from some flowers to the pistils of others. That is a very wasteful process, but tree flowers and grass flowers often use that method. The wind is of more importance, however, in scattering the seeds. Have you ever noticed the winged seeds of the maple, or the feathery umbrella on the dandelion seed? They show how the flowers fit their seeds to sail afar off on the wind. Nuts and fruits are seeds, too, adapted for scattering by animals or man. The squirrel carries off nuts, hides them in the ground and forgets some, which thereupon grow. Man eats the sweet fruit, but throws away the pit, which is the seed the flower wants scattered. Now you can guess why the Spanish needle and the burs stick to you or to woolly animals in the autumn. Perhaps, too, you will remember how some seed pods, like the poppy, crack open near the top, and the wind uses them like pepper boxes, strewing their black dust all around. Some seed pods, like those of the snapdragon, explode with a report like that of a popgun, scattering their own seeds by that force. And sometimes, as in the case of the tumble weed, the whole plant is pulled up by the

wind, and it rolls off across the country, scattering seeds as it goes.

There is much more that is fascinating about flowers; how some catch insects and digest their juices; how they mimic poisonous flowers or insects for protection; how they manufacture food for themselves and their insect colonies; how water-flowers manage their problems, and so on. If you watch in your garden you can learn a great deal; if you read about flowers in books and magazines you can learn still more. And the more you learn, the more you will believe in the miracle and beauty of flowers; the more you will love them as poets, story-tellers and gardeners do.

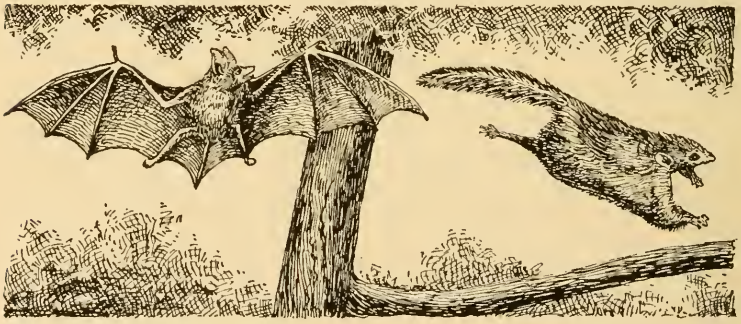
Birds

The most beautiful ornaments of this wonderful land of ours are the flowers and the birds. "Flowers are words which even a babe can understand," said a wise man. Even more dear to us are the birds,

> "Whose household words are songs in many keys,
> Sweeter than instrument of man e'er caught;"

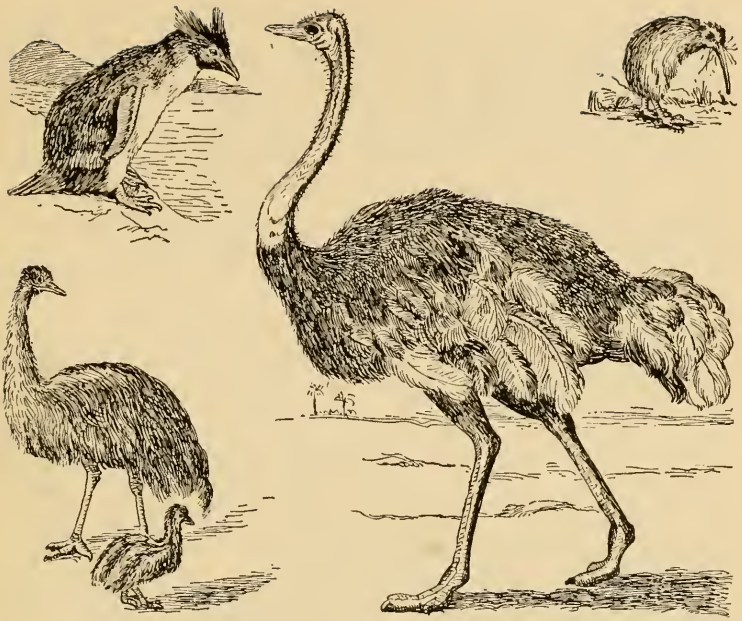
for the most cheerful thing out of doors is a dainty bird pouring from its throat its glad, light-hearted song.

If we ask you, "What is a bird?" you will tell us that it is an animal with feathers, and an animal which flies. Your first answer is quite right, but your second is not wholly true, because bats fly, and



These Are Fliers But Are Not Birds

the bat is not a bird; also there are flying squirrels and flying fishes, which of course look not at all like the birds. Then, too, there are some birds which cannot fly; among these are the ostrich, with its long neck and long legs, and the penguin, a strange bird that walks upright on strong, short "flappers" that



Birds Which Cannot Fly

look like feet and that balances himself by waving other wing-like growths on its sides. The home of the ostrich is in the desert and of the penguin in the cold regions near the South Pole. There are other strange birds, also, that cannot fly.

Already we have learned from these two birds last named that the bird family is scattered all over the world. You cannot go anywhere on the surface of the earth where they cannot be found, and no matter how far you are able to travel you may be surprised to know that most of them travel every year very much farther in single trips than man can possibly go, and very much faster, too. We shall tell you more about this later on.

Their Song. Birds delight us by the beauty of their colored feathers, but even more by their song. Their colors please the eye, but even when they can-

not be seen their song is a constant delight. Did you know that there are many kinds of birds that do not sing, but merely chirp? And that some of the plainest ones, those that really are not beautiful to look at, are the sweetest singers? Which would you prefer to have live in your yard—a bird of the most beautiful color that has no song or a little dark creature who could fill all the air around with a glorious melody?

Where does the song come from? Your voice comes from a voice box called the larynx (pronounced *lahr inks*), and your tongue helps to form the sounds you utter. It is not so with the birds. Their tones comes from a special little organ in the throat called the syrinx (pronounced almost as though spelled *seer ingks*). It is the most wonderful music box in all the world.

You have noticed how loudly a little bird can sing. Just imagine how far you could be heard if your voice was as loud, compared to your size, as a bird's is!

WHAT BIRDS EAT. Some farmers do not like a good many of the birds because they eat growing crops and fruit. They see the damage done by the birds, but they do not always see that these same birds more than pay the farmer for all they destroy. There are more than 300,000 kinds of insects; not all of these varieties live in America, but thousands of them are found on every farm, and many are very injurious to crops. Without the birds many crops would be ruined each year. There are some kinds of caterpillars that in twenty-four hours eat more than a hundred times their own weight in food; one scarlet tanager, a beautiful red bird, has been known in eighteen minutes to eat 630 caterpillars. The tanagers eat a little fruit, but do you not think they earn it? There may be a million plant lice on a single

tree; the birds destroy thousands of these in a single day. Army worms are dreaded by the farmers, and so are tussock moths and many small beetles, like potato bugs; birds eat these by the million; if they did not, our crops would not be half as large as they are.

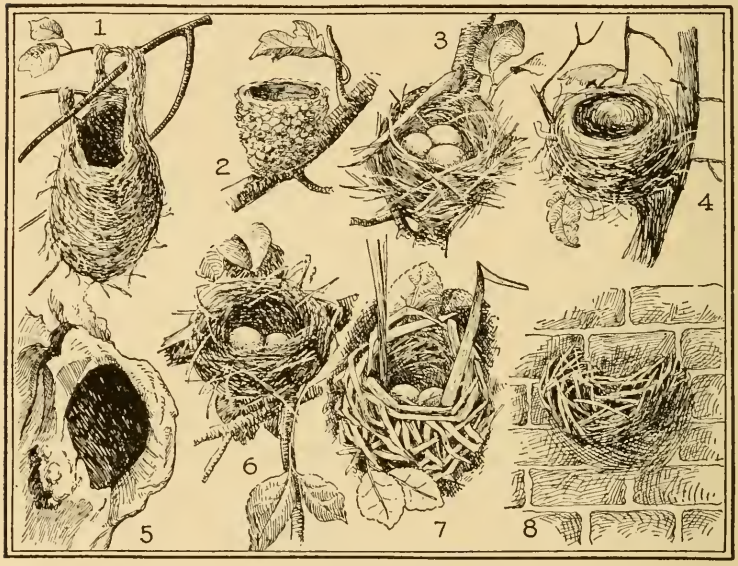
The rose-breasted grosbeak eats so many potato bugs that in some sections it is called the "potato-bug bird." One pair of brown thrashers will destroy 60,000 insects in one season; a dozen pairs of wrens and their young in a season will eat fully one hundred twenty-five pounds of insects. Can people not afford to lose a few cherries and other fruit in exchange for the constant warfare of the birds against these insect pests?

The stories about the quantity of food a bird eats may seem to you like fairy tales, but they are true. You have noticed that birds are always active—always flying or hopping about. You know that when you play hard you get very hungry. Birds are always hungry because of their constant activity, and their great problem is to keep supplied with food. Then, too, when the baby birds are hatched—from two to five in a nest—there are more hungry mouths to feed. Little birds grow very rapidly, and so they require a great deal to eat. Have you ever watched the mother and father birds feeding their young? Does it appear that the little ones ever get enough to eat? The heads of a bird family are about the busiest things out of doors until their young are able to hunt their own food.

When you were a baby your father and mother protected you with loving care. Bird parents show just the same attention to their little ones. They are tireless in bringing to them the almost unbelievable amount of food they require; they watch over them while they are helpless, and protect them even

at the risk of their lives from all bird enemies; they keep the naked little bodies warm until they are covered with feathers, and when grown strong enough they teach them to fly. Within a few weeks the little ones are on the wing, and soon they begin to prepare homes of their own. Some kinds of birds will raise four broods of little ones in a season.

THEIR NESTS. There are a few birds which do not build nests for themselves and their mates; two



VARIETIES OF NESTS

1. Baltimore Oriole
2. Humming Bird
3. Robin
4. Goldfinch
5. Wren
6. Scarlet Tanager
7. Red-Winged Blackbird
8. Chimney Swift

of the most important of them are the cowbird and one species of the cuckoo. The European cuckoo is not a bird you will like when you learn a little about it. It has no home; it will lay its eggs on the ground and then carry them to the nests of other birds and expect the owners of those nests to hatch the eggs and

feed the young when they hatch. It never deposits more than one egg in a nest; it thinks the owner will not notice one extra egg. The cowbird is like the cuckoo. It will not rear its own young; like the cuckoo of Europe it puts its eggs in the nests of other birds. Most birds will allow the cowbird's egg to remain in the nest and will hatch it, but later on in this story you will learn what the yellow warbler does to prevent being imposed upon.

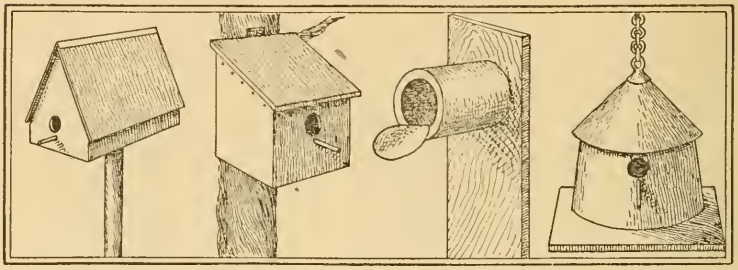
All other birds build nests for their families. Some of these are soft and downy, being made of grasses and lined with feathers, little bits of cloth or down, while others are rough and coarse, constructed with sticks and stones and built high on rocks where enemies cannot reach them. The penguin lays its eggs on bare rocks. The only nest of the ostrich is a hole dug in the warm sand, where the heat of the sun hatches the eggs. One of the most carefully built nests is that of the oriole. It is from six to eight inches in length and is swung from a tree branch which is well protected with foliage. The oriole is a careful builder; it uses grass, string, hair, strips of bark, etc. Not all nests are made of the materials we have named. Some birds, among them the swallow, build of mud or clay; others, like the kingfisher, build tunnels into the bank of river or lake, with an opening near the water, and lay their eggs deep away from sight.

Many birds return to the same nest a second year, while others, like the robin, may keep their homes only long enough to rear one brood of little ones and then abandon it.

Bird Houses. If you ever built a bird house in your yard and painted it nice and bright in red, yellow, green, white, etc., you probably wondered why the birds would not make it their home. Here is the reason: They did not like your bright-colored

paint. They prefer dark colors, as near as possible to the color of the bark of trees. If you will build your bird house in the fall and stain it a dark brown color by spring it will lose its newness and appear weather worn; then some of the earliest birds to come back for the summer will take possession of it.

A house should be about six by eight inches in size at the base and ten inches or a foot in height,



Houses That Please the Birds

with an entrance only large enough to admit the birds. For wrens, do not make the door large enough for the English sparrow to enter, for it may drive out the little wrens. Do not make it possible for cats or squirrels to climb up to the birdhouse, for they will try to catch the young birds. Set the house on a pole, where there is shade, and around the bottom of the pole put a wide piece of tin, to prevent any animal from climbing.

Bird Enemies. We have told you about the millions of insect enemies of man that the birds destroy every year. There is another side to this story of destruction, for just as birds prey upon insect life, so larger animals make victims of the birds. A man who has studied birds all his life and knows what he is talking about says that every cat kills an average of fifty birds a year, but cats are not their worst enemy. Birds have most to fear from human be-

ings—men and boys. Is this hard to believe? It is true, for men shoot birds, many of them for food and many just to satisfy their desire for what they call sport; and boys, we are sorry to say, try to hit them with air guns, slingshots, stones, etc. You never knew a girl who would injure these cheerful, singing feathered friends of ours; boys should follow such good examples.

Next to men and boys, cats and squirrels, the birds suffer from heavy storms and cold, accidents, snakes and other animals, such as skunks and weasels.

Bird Migrations. Where do birds go during the cold Northern winters? You have noticed that about the same time early every autumn you miss their cheerful songs, and soon after the first of October only a very few are to be seen. The junco, or snowbird, the tree sparrow, the brown creeper and a very few others are bold enough to stay with us all winter. (Do you throw crumbs to them when the ground is covered with snow? If you do, they will be regular visitors to your door.) All others disappear. They do not leave us merely on account of cold weather, for we know some birds stay north all winter; they migrate largely for the reason that they must go where food is plentiful. Most of them would starve to death during the cold months in the North. When they return from their southern winter homes you will notice they are strong and fresh from abundant feeding in the tropics.

Many of the birds are with us all summer, and you are acquainted with the commonest of these. There are others which pass us by every spring and go far north into Canada to spend the summer around Hudson Bay and near the Arctic Ocean. All of the local birds and those from the far north take wing in the fall and fly straight to a warm climate. Many stop around the Gulf of Mexico, others stay in Mex-

ico, but the great majority fly into the northern part of South America, many species even crossing the Equator and wintering south of the Amazon River. One bird, the yellowleg, is among the greatest travelers of them all. During the summer he enjoys the climate of Northern Canada; when he is warned away by the approach of frost he flies 8,000 miles, to spend the winter down in Argentina, in the southern part of the South American continent. In the spring he starts back on the return trip of 8,000 miles; so this little fellow travels 16,000 miles a year on his migration. Snipe and plover breed near the Arctic Circle and in the fall they, too, go to the southern end of South America.

On their trips south in the fall most birds are not noticed in their flight; some fly very high, and others go in small groups—even singly; some species are night-fliers. You can, however, note the flight of the ducks and their peculiar formation as they fly—in the shape of a great wedge, with the leader in front. Very few birds fly continually in their migration. They often stop for days or weeks on the way, feeding wherever they find anything inviting. For instance, the bobolinks stay for weeks in the ricefields of South Carolina, where they are disliked and are called ricebirds. However, some birds, like the golden plover, start on a flight

DIRECTIONS OF MIGRATION

from Nova Scotia over the Atlantic Ocean and for many hundreds of miles remain on the wing, resting only on the West Indies islands before reaching the shores of Brazil.

When they return north in the spring, birds will repay watching. If you will keep a record you will find that some species will be seen in the trees in your yard during the same week year after year, and that some of them may fly straight back thousands of miles to the same nests they occupied the year before.

BIRDS YOU OUGHT TO KNOW

On our colored chart are a dozen pictures of birds about which every boy and girl should know. We shall tell you many things about them here; will you not try to learn more from father and mother or from your teacher or other older friends? Birds should interest you all your life.

When we go for a walk, we enjoy it more if we know the people we meet. So we shall enjoy the outdoors more if we know the birds we see and can recognize their songs and calls.

THE ROBIN. The robin is one of the best known and best loved birds. When we hear his cheerful song some morning in early spring, we hasten to the window to see him. We feel more certain that spring is really here, when we find him on our lawn.

He runs along the ground, stops and listens with his head cocked on one side, runs again, makes a sudden dive with his bill, tosses the dirt up, keeps working and tossing and soon he is tugging and pulling at an angle-worm which he has part way out of the ground. How did he know the angle-worm was there? I do not know. I saw one pull so hard that the worm came in two and the robin stumbled backward. He seemed a very surprised bird.

Even the best of birds may have some faults. Some folks say that the robin steals their cherries. Those folks do not know that if the robin had not been protecting our cherries all the spring by killing the bugs and worms on the tree, there would be no cherries for anyone. He probably thinks he has a right to some of the fruit he saved; do you think he earned it? Robins are very fond of mulberries; if we plant a mulberry tree, the robin will eat fewer cherries. They live mostly on insects and wild fruit.

In the northern states we are very fond of the robin and he is protected by law. When he has finished raising his family here, he goes south to spend the winter. Instead of living about the homes and cheering people with his song, he stays back in the woods, stuffing himself with rich, druggy berries. In some states where they are not appreciated robins are killed for food. Do you not hope they will grow fond of him as we are and pass laws to protect him?

The robin is ten inches long, dull brown in color, with a bright red-brown or russet breast. The male has a black head. The female has a gray head and a paler breast. The young robins have a breast spotted with black. Notice the flecked or speckled throat on all of them. That is the mark of the thrush family, to which robins belong.

Robins are not much afraid of people, and often they build their nests near houses. One built its nest over the door of our house; one built on a hay-rake that stood in the barnyard. Do you know what robins use to make their nests? It is made of mud and grass, so it isn't a very handsome nest. They usually build on a horizontal branch or in the fork of a tree often quite low down. Like many other birds, the mamma robin likes to build the nest herself. You see she has to sit in it, so she knows just how she wants it. Anyway, both birds bring ma-

terial for the nest, but if papa robin tries to lay it in place, the mother bird becomes very angry and flies at him and drives him out, just as though he had no business there.

In the nest the mother bird lays four or five blue-green eggs, and in a few weeks the baby robins, big-mouthed and hungry, are hatched. Have you watched the old robins push the little ones out when it is time for them to learn to fly? Often the nest is abandoned as soon as the young have become independent.

While robin is a very peaceable bird, one writer says that it can "scare an English sparrow with one flirt of its tail."

THE BLUEBIRD. The bluebird arrives with the martins and the pussy-willows, frequently ahead of the robin, sometimes as early as the third week in February. We like him because he is so friendly, sings so cheerily and sweetly, and because he looks like a bit of the blue spring sky.

Lowell calls him an "April poem that God has dowered with wings." One writer says it seems—

> "When 'mid the budding elms the bluebird flies,
> As if a bit of sky had taken wings."

The male birds, like the males of most bird families, arrive a week or even ten days ahead of the females. There may be deep snow after these first birds come. It is a good idea to scatter some crumbs every day; that will keep these early visitors from starving and help persuade them to stay and build in our yard.

Bluebirds like to be near folks. They will nest in the orchard or garden, or in houses put up for them. Unfortunately the bluebird and English sparrow are about the same size, and the sparrows often taken possession of the houses put up for bluebirds. If it is a very desirable location, the blue-

birds may fight the sparrows and, unless there are too many of them, drive them away.

Watch them when they are building their nest and you will see that the male bird brings material and waits outside the box until the mother bird comes out. Then he goes in and lays it in place. Probably she lays it over to suit herself after he has gone.

The nest is lined with grass. There are four or five pale bluish eggs.

The bluebird's call is a short, sweet warble, and the song is the warbling continued. Do you know the verses, "I know the song that the bluebird is singing"? Perhaps you sing them at school:

> "I know the song that the bluebird is singing,
> Up in the apple tree where he is swinging.
> Brave little fellow, the skies may be dreary,
> Nothing cares he while his heart is so cheery.
> Hark! How the music leaps out of his throat!
> Hark! Was there ever so merry a note?
> Listen a while and you'll hear what he's saying,
> Up in the apple tree swinging and swaying.
> 'Daffodil! Daffodil!' Say, do you hear?
> Summer is coming and springtime is here!"

The whole seven inches of him fairly bubbles over with joy.

THE YELLOW WARBLER. There are some thirty varieties of warblers in the United States, most of which winter in South America or Cuba and nest as far north as Canada. Some few of them, among them the yellow, stay with us through the summer and raise their families here. The others travel in flocks, passing north in May and returning south in September. One morning in the fall you may go out and see a great many of them; the next morning there may be none at all.

The male yellow warbler has chestnut streaks on the sides; the female is duller and without the streaks.

They appear in early May and, darting after insects, look like a gleam of sunshine.

The nest is made of plant fibers quilted together, and is fastened to upright forks of bushes or trees, usually quite low down. All warblers lay four to six white eggs, and with the exception of the Swainson warbler, which nests in the Southern states, the eggs are spotted with brown or chestnut blotches.

Warblers eat plant lice, leaf hoppers and all sorts of leaf worms, picking them from the leaves of trees and shrubs. A few warblers catch their food on the wing. The oven-bird is a warbler which nests on the ground. The yellow-breasted chat and the black and white creeper are warblers. Have you seen the creeper creeping around tree trunks hunting insects? Unless you look carefully you might mistake the yellow warbler for a goldfinch, but the goldfinch has black wings and tail and a black topknot.

One of the most interesting things about the warbler is the way it outwits the cowbird. The cowbird is related to the blackbirds and is a bird tramp, lazy and without a home. It deposits its eggs in the nests of any small bird. The young cowbird will be larger and stronger than the little birds in whose home it is, and so will be able to get most of the food brought by the parent birds. The birds which really belong in the nest are crowded out or nearly starved. Young cowbirds do not learn to take care of themselves as early as most young birds do, so the parent birds are kept feeding the interloper so long that often they do not have time to raise a second brood.

The yellow warbler has no notion of being imposed on in that way. So when she comes home and finds a large cowbird egg among her own she simply builds another bottom in the nest, covering the cowbird egg. Then she lays fresh eggs of her own. If a cowbird lays another egg with these, the parent bird will make another partition. Sometimes she

makes as many as three. How do you suppose she knows that that egg will hatch into a big greedy bird that will take the food from the rightful owners of the nest?

The warblers' song is only a warble, hardly a song at all. Its call is a sharp "Che-wee, che-wee che-wee." This warbler is sometimes called the "yellow bird." It winters in Central America, and is a small bird to travel that long distance.

THE RED-WINGED BLACKBIRD. Early in March, before the oriole arrives, you may hear "O-ka-lee," or "Conk-err-ee," as it sounds to some people. Then you know that the red-winged blackbird is with us again. The male is a brilliant black, with shoulders of scarlet and buff; the female is a brownish-black above and streaked below. He is quite dashing looking; she is quite plain. They are about nine inches long.

Blackbirds are sociable birds, and live in colonies and travel in flocks. Sometimes they gather in the trees and hold a concert, singing with all their hearts a chorus of liquid sound.

Half of the blackbirds' food is weed seed, one-fourth beetles, grasshoppers and other insects. Redwing also eats army worms, wasps, flies, spiders and bugs, and when he is migrating in the spring and fall he may eat a small amount of grain.

It is a pretty sight to see the flocks go by, especially in the fall. Did you ever try to count how many you could see? Sometimes a stretch of sky is fairly black with them, and how they sing as they fly!

The nest of redwing is well-woven of grass and rushes, and partially suspended from the rim. Redwing is a cousin of the Baltimore oriole. In the nest are four or five light blue eggs, marked with purplish-black.

Other members of the family are the meadow lark, grackle, yellow-headed blackbird and bobolink. The

grackles strut about so dignified and lordly that it is fascinating to watch them. The purple grackle is especially brilliant, combining violet, purple, green, and steel-blue in his coloring on neck and wings.

The yellow-head is found on the western plains and seldom seen in the central states. His head, neck, breast and throat are bright orange-yellow. Someone called him:

> "Fire-bearer of the gods, blue-black,
> With flecks of sunshine on thy back."

THE WREN. The wren is often called a saucy bird, because it holds its tail erect and flirts it so impudently. The wren is smaller than the English sparrow, measuring four and three-quarters inches. It is brown above, light brown or dull gray below, with tail, wings and flanks barred.

Wrens like to build near the house, and will use any house put up for them. It is a good idea to make the wren house small, with an entrance so small that the English sparrow cannot get in.

The male bird arrives first. If there are several boxes on the premises, he carries twigs into all of them. Gene Stratton Porter, who has studied many of them, says that this is because all the boxes are much too large. The male fills in between the door and the space needed for the nest, then when the female arrives she selects the location she likes best and the nest is built in that box.

You may often see a wren trying to drag in at the tiny door of the house a large branched twig much too big to go in. He does not give up easily, but pulls and tugs and comes back to it again. Sometimes you can help him by breaking the twig so it will go in. The nest proper is made of grass, hair and down and often chicken feathers. Wrens have been known to build in the pocket of an old coat left hanging outdoors, or in any crevice in boards. There

are six to eight white eggs, thickly speckled with pinkish brown.

Wrens which are disturbed become small furies. They will fly directly at anyone or anything which molests them, keeping up all the time an angry chatter which sometimes becomes so violent that it sounds like real scolding. Unless the sparrows are too numerous, wrens will drive them away.

Wrens sing all the time, rain or shine. I do not think anyone has tried to imitate the wren's song. It is just a jumble of loud, clear, bubbling notes. Unlike most birds, wrens still sing when nest-making is over, and they retire to the woods to moult.

Insects form almost ninety-eight per cent of wrens' food. The baby wrens eat almost as much as any other little birds. In one case when the mother bird did all the feeding, she made one hundred ten trips to the nest in four and a half hours, carrying an insect each time.

THE BARN SWALLOW. Swallows have been called the "light cavalry of the bird army." They live almost wholly on insects. Their long, pointed tails enable them to turn quickly, and they can catch their food on the wing. They are the only birds which can catch the swift-flying dragon-flies.

All swallows have short, broad, deeply-cleft bills with which they catch the insects. They fly with their bills open, their saliva is sticky, and once an insect gets in a swallow's mouth there is no chance at all that he will get out. When a number of insects have been caught, the bird rolls them into a pellet and swallows them. The barn swallows' special food is flies. They also eat many ants, catching the winged females before they have an opportunity to found new colonies.

Barn swallows are only a trifle larger than English sparrows, but their long wings make them appear larger than they are. They are the most graceful

and beautiful of the swallows. They are distinguished by bright brown markings and a deeply forked tail. Notice the white spot on all the tail feathers except the middle pair. The female is duller in color than the male, and her tail is not so deeply forked.

They build inside of buildings, on the beams and rafters. The nest is bowl-shaped and formed of pellets of mud stuck together with saliva and lined with feathers. It is stuck to the rafters and open at the top. There are five to seven white eggs, dotted with reddish brown.

The purple, or house, martins are another species of swallow which will stay around our homes if we put up boxes in which they can build. They are the largest of the swallows, a beautiful glossy black with purplish tints, and they are most sociable, often building close to homes. They live generally in colonies; that is, several families will build in the same house, if it is divided into several rooms each with a separate opening—a bird apartment building. The house should be placed on a pole ten or fifteen feet high.

Tree, or white breasted, swallows, which we often see on telegraph wires, and bank swallows, or sand martins, are two other members of this family.

The swallow's graceful, easy movements and the fact that it is almost always on the wing causes one writer to address them, "Is it far to heaven, O swallow, swallow?"

RUBY-THROATED HUMMING-BIRD. There are more than a hundred species of humming-birds, but the ruby-throated is the only one which comes outside of the tropics. Their name comes from the hum made by the vibration of their wings, which move so fast that they can hardly be seen when in motion. "Jewels of nature" is the fanciful name given them because of the ruby-red throat and shining green back.

Ruby-throat is three and three-quarters inches long, although it looks smaller. The long bill is formed to dip deep into flowers and extract the honey and the insects found feeding there. The long-throated trumpet flower is a favorite feeding place. Humming birds are so small and sphinx moths are so large that the moth is often mistaken for the bird.

Humming birds are quite tame. They dart about quickly, but this is in pursuit of the nectar they are gathering, not because they are afraid. They often fly into houses. They do not like anyone near their nests, and will dash at intruders with angry squeaks.

The nest is placed on a small limb which may be no larger than a lead pencil. It is shallow, and about as large around as a silver dollar. The outside wall is usually made of lichen, bound on with cobwebs. The nest is lined with the soft velvety down from the inside of a chestnut burr, if there are any to be found in the vicinity. The small size and the lichen covering make the nest look like a knot on the limb, or like a tuft of moss. Do you suppose the bird knows that the lichen makes the nest difficult for a person to see? Did you ever find a humming bird's nest?

Our common swifts belong to the same family as the humming-birds, not to the swallows.

THE SONG SPARROW.

> "Now, see if you can tell, my dear,
> What bird it is that every year,
> Sings, 'Sweet, sweet, sweet, very merry cheer'!"

Someone else thought he was saying, "Fitz, fitz, fitz, we, we-sir, sir-witz, witz." Whatever he is saying, he is singing sweetly and continuously. "Master singer of the winter woods," he has been called. The song resembles that of the canary. He is probably the best known, most abundant and most widely distributed bird we have.

One-seventh of all the birds in the United States belong to the sparrow family. There are more than thirty species, and all except the English sparrow are counted among the good birds. The English sparrow eats many weed seeds, but it is so quarrelsome and so numerous that it drives away birds we would rather have near us, so most people think it is best to get rid of the English sparrow.

Many sparrows stay with us all winter, but most of them go farther south. All sparrows are dusty brown, and are streaked with gray; all of them eat many weed seeds and some insects. Sparrows have strong, conical bills with which they crack the shells of the seeds. Dr. Beal of Iowa estimates that the sparrows of that state eat 875 tons of weed seed every year. Sparrows fly slowly and heavily, quite unlike the quick, graceful flight of the swallow.

Song sparrows nest in vines and shrubs about the yard, or in low bushes along creeks and rivers. You may have seen them running through the grass looking like small mice. They probably were hunting ground beetles, grasshoppers, or grasshoppers' eggs, which make up about one-fourth of their food. In the nest of grass you may find three to five blue-white eggs spotted with brown.

Other sparrows are the field sparrow, which has a reddish bill; chipping sparrow, sometimes called the hair bird because it lines its nest with hair; and the tree sparrow, which is found only in the Northern states. Juncoes, snowflakes and snowbirds are sparrows which live in Canada, and visit us only in the winter, when our sparrows have gone farther south, where they can be more sure of finding plenty of weed seeds not covered over by snow.

Because sparrows are found all over the country, they are one of the birds with which we compare other birds in estimating size. The song sparrow is six and a quarter inches long.

THE BALTIMORE ORIOLE. The Baltimore oriole is seven and a half inches long, about four-fifths the size of a robin. The male has a brilliant orange breast, rump and tips of the outer wing feathers. The female is dull gray and yellow. Lowell calls him a "glance of summer fire."

Orioles like to build their nests as near as possible to a house. They eat little fruit, but will keep our trees free from hairy and tent caterpillars, gypsy moths, codling moths, plum curculios, tussock moths, browntails and plant lice. They also eat squash and cucumber beetles and in the south the cotton boll weevil. So you see that they are very valuable birds.

Do you know what the nest looks like? It resembles a short, deep hammock hung out on the end of a limb. It is made of string and plant fiber, and if you leave a bit of bright-colored yarn out in the yard, I suspect you will find the oriole has woven it into its nest. The birds collect string and fiber and hang it over a twig, fastening it so it will not blow away. When they think they have enough, the female pushes her way into the middle of it, and begins to push it out and bind it together and fasten it strongly to the twigs and small limbs. They use real knots to fasten it. The male all the time during building brings more material. When the hammock is finished, the real nest of moss, wool, down and hair is built inside.

As you can see by looking at an oriole's nest, the mother bird sits away down in the bottom where she can get no air and cannot look out. Gene Stratton Porter tells of an oriole which built a window in her hammock. She is sure the bird did it on purpose, because she started one, found it would be too high, so left it and made another lower down. In the nest the oriole lays five or six white eggs, marked with blackish brown.

The oriole has a sharp, clear whistle which is

unlike that of any other bird. Its song is appealing, and it sings freely. Orioles sing and chatter all the time. I think they tell one another what a good time they are having, and what a pretty color this string is, and how fine it will look woven in just here, and how the children are getting along, and whether they have their eyes open. And the baby birds chatter away—all day and into the night. I think they must talk in their sleep, because you will hear chirps and peeps very late, long after they should be asleep.

Orioles winter in Central America. Other names for the Baltimore are golden oriole, gold robin, hang-nest, English robin, and fire-bird. You can see why they are called by each name. Orioles belong to the blackbird family.

There are many pretty poems about the oriole. Here is an old verse:

"Of all the weavers that I know,
The oriole's the best;
High on the apple tree he weaves
A cozy little nest."

THE BLUE JAY. The blue jay is so attractive-looking and so persistent with his rollicking good humor and his friendliness, that we make excuses for him. He needs to be excused, because he is ill-mannered, noisy, quarrelsome, thieving. He destroys the eggs and young of other birds. He takes their food and nesting material. Even his harsh call, "Jay! Jay! Jay!" sounds antagonistic. He looks as though "he would not avoid trouble if he could." He likes to imitate the call of a sparrowhawk or red-shoulder and throw the whole bird community into hysterics of fear. This may be high spirits, not bad temper, but birds, like folks, should consider the consequences of their jokes and not make things too unpleasant for others. His blue coat and his call give him his name.

Jays are sociable. After the nesting season is over, you may find a group of them gathered together in the tops of the trees, calling and talking and screeching. "Ge-rul-lup" is about the way the three-note call sounds. When the mother bird is brooding the male watches over her and sings to her, and he is a good provider of food for the babies. He is not harsh to them, but kind and gentle, singing softly, instead of making his harsh, discordant sound. His long tail keeps him from traveling well in a high wind. It is amusing to watch his efforts at such times.

The nest is made of twigs and sticks, in bushes or low trees; young pine trees are especially liked. There are four pale greenish-blue eggs speckled with brown.

Jays may stay with us all the year, in the orchards or door-yards, or calling from the woods. They eat wood-borers, scale insects, grasshoppers and the eggs of some caterpillars; these comprise about one-fifth of their food. The rest is chiefly acorns, chestnuts and beechnuts. They store nuts, as squirrels do. They also eat some corn. The poet Riley has some verses about the jay:

"Mr. Bluejay, full o' sass,
In them baseball clothes o' his,
Sportin' round the orchard, jes
Like he owned the premises."

Everard Jack Appleton, in *The Quiet Courage,* has these verses, in Southern negro dialet:

Jay-bird ain't no singer,
But his clothes is gay!
Flies up in a tree an' yells
All de lifelong day.
Soun's des lak a dorg-fight
When he 'gins ter squawl,
Othuh buhds dey stan's aside—
Let's him do it all!

Odder buhds doan' lahk him,
Dey des leave him be;
Go erway an' let him think
He done bought dat tree!
Ain't he lahk some folkses—
Fin' 'em norf an' souf—
Might mak folks b'leeve in him,
Ef he'd shet he mouf!"

THE BOBOLINK. Robert of Lincoln is a great favorite. His black and white coat is striking, he is friendly, he guards his mate on the nest, feeds the young faithfully, and sings beautifully. He gets his name from his call, which sounds like "Bob-o-link! Bob-o-link! Bob-o-link! Spink, spank, spink!" He has a long song which begins with his name but is soon lost in a multitude of other notes. His song is so contagious that Lowell said it "runs down, a brook of laughter through the air."

He sits on the fence, teeters on the grass, flutters above the clover and flies in a topsy-turvy fashion, singing all the while, in an irrepressible way. Bobolink, you know, is related to the blackbirds, and his alarm note resembles theirs.

Bobolinks come north early in May. By the middle of August the male has lost his beautiful coat, has stopped singing and he and his mate are preparing to leave for the winter home in Brazil. In the south they loiter among the rice fields of South Carolina, gorging themselves on this dainty until they become known as ricebirds or reed birds. In October we find them in Jamaica. By this time they are so fat the islanders call them butter birds. If you look on the map and locate the headquarters of the Paraguay River, you will find the winter home of the bobolinks. In April they are again in Florida on their way north. Here they are called May birds.

Originally bobolinks were found only in the east-

ern part of the United States, but, like many other birds, they have followed emigration, until now they are found as far west as Utah and Nevada.

Bobolinks nest on the ground. The female selects a spot well away from the edge of a field—a spot which looks like many other spots, so that no one can locate the nest. Then she sits down and turns about until she has worked out a small hollow. This she lines with dead leaves and grass. Sometimes she pulls the growing leaves and grasses together over her, to form a sort of arch. Bobolinks especially like clover fields. Because there is no way of marking the location of the nest, many young bobolinks are killed, but in spite of the numbers which are killed in such ways and in the rice fields of the south they do not seem to be decreasing in numbers. The white eggs, heavily spotted with brown, will probably all hatch out, and there will be four to six young birds. Do you remember the verses in which the bobolink sings, "Noboby knows but my mate and I where our nest and our nestlings lie"? They know that the nest is well hidden. All the time the mother is brooding, the gay, happy father bird is sitting somewhere within sound, singing to her as cheerily as he knows how. In case of heavy rains before the young are old enough to fly, the young birds may be drowned.

The United States government estimates that bobolinks eat ten per cent of the rice crop each year, but in the north he eats only insects and weed seeds.

The full-grown birds are seven and a quarter inches long.

THE RED-HEADED WOODPECKER. Redhead and his brothers, the flicker (or as it is sometimes called, yellow-hammer, high hole, or yarup) and the yellow-bellied sap-sucker, are all fine guardsmen for our trees. They use their bills so effectively and so steadily to drill holes in trees in search of grubs that sometimes they sound like a whole battery of triphammers.

The bill is also used to excavate a place for a nest.

While the woodpecker is working it uses its stiff, pointed tail feathers as a prop. The claws have two toes pointing forward and two pointing backward, to help support the bird when it is climbing. The tongue may be twice as long as the head, and it has sharp barbs on the end. The bill is long and strong, and has a chisel point to cut with. You see how well these birds are equipped for the work they do.

Nearly half of the woodpeckers' food is boring insects, which if they were not checked would kill the trees. These birds also eat ants, seeds and nut meats. The redhead is not as hard a worker in search of food as some of the other birds; sometimes it simply sits and watches for flying beetles to get in the way of its long tongue.

Redhead is noisy and quarrelsome, and eats the eggs and young of other birds, but because it does so much to help us it is seldom killed. In some sections where these birds drum on buildings they keep people from sleeping and may even deface the structure.

In such case someone is apt to go looking for them with a gun. That is unfortunate, because we have few other birds which are as good protectors for our orchard and shade trees.

Woodpeckers build new nests each year, leaving the old ones for other birds. Holes in fence posts or in trees in the orchards or woods are all used. The eggs are four to six, and are glossy white.

Adult birds are nine and three-quarter inches long—almost the size of the robin. The entire head and upper breast of adults is red. The young birds have a gray head and back streaked with darker coloring.